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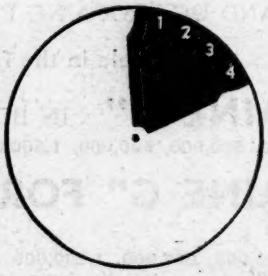

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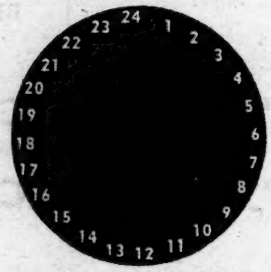

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SYMPTOMS AND THEIR SIGNIFICANCE.[1]

By ALEX SINCLAIR, M.D., M.R.C.P., F.R.A.C.P.,
Melbourne.

A SYMPTOM is defined as a subjective phenomenon of disease. It is a clue in the elucidation of a physical disorder. A group of symptoms together with an appropriate number of relevant signs is the basis upon which a diagnosis of disease is made. The purpose of this communication is to direct attention to some of the difficulties which arise when we attempt to assess the value of these subjective phenomena of disease, to indicate some of their limitations in this respect, and to submit that a symptom has no useful meaning as a clue to diagnosis unless due regard is taken both of the manner of its presentation and also of the emotional state of the patient at the time.

A symptom must necessarily be described in words, so that in order to examine its validity we are confronted with the problem of the meaning of words. It is not my purpose to dilate upon the numerous difficulties that beset us when we attempt to translate thought and its attendant emotional content into language. Perhaps it is enough to say that in most instances words have a special significance as a vehicle of meaning for each individual, depending amongst very many other factors upon the emotional state of the individual.

All communication between individuals is in great part an exchange of emotionally determined attitudes. In day-to-day contact with our fellows we consciously or unconsciously communicate through language our emotional state at the time. More often than not we use words to disguise what we think or feel. It follows that we shall be more ready to disguise what we feel if there is some conscious or unconscious reason which prompts us not to expose either to ourselves or to another person the real nature of those feelings. May I direct attention to certain feelings in this connexion which are relevant to the present discussion?

All of us from infancy onwards may react to threats in our environment with feelings of anxiety or of fear. The source of this anxiety may not be known to us. In some degree or other, too, we may wish to be dependent emotionally upon other figures in our environment. Numbers of us, depending on the fabric of our personal background, face the world with some resentment or hostility, laying at the door of our environment the inadequacies that more truly abide within ourselves. The degree and quality of

[1] Read at a meeting of The Royal Australasian College of Physicians on May 28, 1954, at Melbourne.

such feelings of anxiety, dependency or aggression originate in all past experience, and it is a fact that these early formed reaction patterns tend to repeat themselves in all succeeding experience, providing an appropriate stimulus is present. These and other emotional reactions may manifest themselves in two ways. Firstly, they may express themselves in somatic symptoms, as in the neurotic states, or secondly, they may determine the method of presentation of symptoms of physical illness. In doing so they impress upon that symptom a quality that is peculiar to each individual. In this communication I am concerned with this second effect rather than with the first.

I suppose the genesis of symptom language is laid down in childhood. The child finds that a convenient and effective currency of emotional intercommunications with those about him is in the expression of feelings of discomfort. In a child-parent relationship the expression of discomfort is an almost invariably reliable stimulus invoking a parental emotional response of affection and soothing protectiveness. Thus it is that when a child communicates the presence of pain or other discomfort, he may communicate in addition his fears, his wish to be looked after, or his resentment that he is not being looked after. If he finds that this new currency of the exchange of emotional expression is an effective one, he may learn to use it more and more.

The uninhibited interchange of feelings between one person and another is always a difficult matter, and one which becomes more difficult for some of us as we grow older. In contrast to this difficulty we find, however, that the exchange of words describing physical sensations is a much easier medium. We find it easier to tell one another how we feel rather than what we feel. If, then, we consider the language of an individual who is, for example, anxious, dependent or aggressive, we find he may use the language of illness to express to others his hidden emotional content. In such an event, illness is expressed as a thing that "lurks", "strikes", "attacks" and against which he "battles" or "struggles", or to which he "succumbs". For the anxious individual, illness becomes a tangible expression of all the fears and insecurities that beset him. The sufferer approaches illness as if it is something apart from himself voicing a plea or a demand that it be removed from him. So it is that symptoms become symbols which are poured out on the doctor by the dependent or anxious person, shot at him by the resentful one, or piled one upon the other by the aggressive hysteric who discards the disease on the Hippocratic doorstep, leaving a note, as it were, requesting to be informed when the disease is cured.

Let me refer in a little more detail to the method of symptom presentation of a patient who, in addition to his particular physical illness, is anxious. It is my experience that he voices that anxiety commonly in either the first or the last part of the interview. He dresses his fear in the garb of cancer, tuberculosis, death or insanity. He may betray his anxiety at particular times throughout the interview by the movements of his hands, by the posture of anxious alertness, by mannerisms of tenseness, by the colour of his skin, or by an increase in lachrymal secretion. He may equally well betray his anxiety by his efforts to conceal it. A casual request for "just a routine check-up" may be a form of assurance to his physician that he has no fears of disease. At the termination of such a "routine check-up" he is prone to ask for a "verdict". Again, he may exhibit anxiety by the exaggerated mannerisms of relaxation and repose. He may use a cigarette to assist him in this pantomime of unconcern. He may avoid discussion of his real anxiety by engaging in an apparently unemotional and intellectualized or technical discussion on his or some other person's illness. He may emphasize his "frankness" and so avoid it, or ask to be told the whole truth, fearing that he will be told it. If his anxieties are not allayed during the interview, he may find it difficult to dislodge himself from his chair and take his leave. As I have said, he may voice his real anxiety for the first time when he becomes aware that his physician is attempting politely to usher him through the doorway.

The dependent person is often early for his appointment and may come accompanied by a relative, whose functions seem to be those of an interested shareholder in the patient's malady as well as an amplifying system. The dependent patient is often described by the physician as "intelligent", "nice", or "very cooperative" because of his obedience, his deference, and his readiness to accept the oracular pronouncements of his doctor almost before they are made. He is inclined to present the type of symptom complex which he feels the physician is most interested in. His replies to leading questions are eminently satisfactory. The interview is often concluded leaving both doctor and patient pleased with it, and a further rather early appointment is arranged. The patient may come back or telephone in an hour or so in order "just to check up" on one point in the instructions which have so recently been given him.

The hypochondriacal individual often gives the impression that he is presenting evidence rather than presenting symptoms. Dates and times are often meticulously documented. Detail is profuse, and "precision built" theories of cause and effect are pressed home with unrelenting persistence. This all proclaims his terrible need to have his symptoms accepted *in toto*. He gives his listener the impression that he suffers more at the hands of this need than from the symptom itself. The tension invoking such symptom pressure often becomes transmitted to his physician, who commences to realize that he can release himself from this tension only by accepting the symptom complex as it stands and with no further questions asked.

The patient who has in addition to his physical illness considerable repressed or unrepressed aggression will exhibit this in many ways. The medical interview is to him a medium of expressing this aggression. Such a patient, always finding difficulty in establishing satisfactory emotional interrelationships with others in his environment because of this underlying aggression in himself, will encounter the same difficulty in relating himself to his physician—and especially should perchance the physician himself happen to have a similar emotional problem of repressed aggression. Such a patient has often seen many doctors, to whom he may refer by either their surnames or their Christian names without title. True, he may initially allay the physician's anxieties by declaring his satisfaction and relief that for the first time he is consulting someone who understands his malady. In presenting his symptoms he may indicate his resentment at their presence and his inability to understand why he of all people should be so afflicted. As well as giving a recital of the nature and quality of the symptoms, he often emphasizes the serious limitations which they put upon him occupationally, socially or financially. He may even stress the effect they are having upon his wife or his children. It is important to determine with him what in his mind appears to be their causation. It is often found that he attributes them to some life occurrence beyond his control—a stress which was unique, crushing, unmerited, and to him quite incomprehensible. During the recital of symptoms it is common to note localized skin flushing and general bodily tension. This mounts if the patient is allowed to gather the impression that anything he says is being criticized, belittled, disapproved of or disbelieved. He is usually anxious to have a date set for the consummation of his cure. He is commonly found to be "allergic" to many drugs. He finds it inconvenient or impracticable to follow a medical régime proposed to him. He may engage in an argument or discussion on matters relating to his illness. In such a contest the physician finds it difficult to emerge the victor. The patient usually leaves his medical adviser in a state of irritation which is often discharged upon the next patient or upon his secretary.

We come now to a consideration of the patient who employs the presentation of symptoms of disease as an hysterical defence mechanism. You are quite familiar with the typical characteristics of hysterical somatic dissociation, and have frequently noted the manner in which, for example, an hysterical paralysis is presented by the

patient. You are aware of its bizarre histrionic quality and all the other features which suggest to the examiner that the condition described is not of organic origin. One particular feature to which I would direct attention is the remarkable absence of appropriate anxiety. For example, a patient who has an hysterical paraplegia appears to be suffering much less and to be less concerned than he would be if that lesion was due to organic interference with spinal cord function.

I should like to direct attention, then, to the patient who does not present with such loss or disturbance of body function, but who uses symptom presentation as an expression of an underlying hysterical mechanism. In such a case the patient uses physical symptoms to exteriorize an unconscious mental conflict and by so doing avoids exhibiting consciously or consciously feeling any anxiety. His symptoms are recited without any of the concern which may characterize the symptom presentation in a predominantly organic illness, nor does he show any of the anxiety or emotional tension which is so apparent in individuals who have an anxiety state alone or in conjunction with an organic disorder. His symptoms are multiple, highly elaborated, bizarre. The recital of his story is irritating to most clinicians because of the attitude of the patient. He presents a symptom complex which at its face value indicates widespread organic disease, yet the patient remains calm and his attitude to his illness is a detached one, as though it did not really belong to him. He takes no responsibility for it, nor for its relief. He hands it as it were to the physician to deal with, detaching himself from any participation in the process.

In an hysterical personality symptoms are presented in several different patterns, depending on the individual. In some, they may be presented with sparse emphasis and in the minor key of understatement; but as the interview proceeds with further questioning, the symptom is gradually added to until it represents an expression of major disorder. For example, an opening statement such as "I don't always eat terribly well" tends upon further questioning to become "Well, actually, for some days at a time I don't eat a thing". Such initial understatement of disability as it develops to overstatement is often punctuated by reassurances that the disability is really not of very great importance.

Another method of symptom presentation in the hysterical personality is to transfix the listener with a highly elaborated and colourful account of bizarre physical symptoms which cannot be found in any medical text. Such a recital may so loudly proclaim hysteria that the listener fails to give proper credence to any of the symptom material. For example, a highly coloured account of headache may direct attention away from the possibility that the headache originates in raised intracranial pressure.

Perhaps the commonest method of symptom presentation encountered in the hysterical personality is one in which the patient declares his symptoms with little show of emotion and concludes the recital by asking the physician what he intends to do about their removal. The emphasis upon action is maximal upon the doctor and minimal on the patient, who implies this attitude when he says, for example, "What are you going to do about my headache?" or "Something will have to be done about this vomiting". As suggested before, the physician often has the irritating impression that he is left holding a collection of symptoms with no patient to share in the process. The obvious risk is that amongst such a collection of symptoms there may be some indicative of organic disorder.

In this communication I have attempted to stress the point that the full significance of symptoms rests upon an assessment of the mental and emotional make-up of each individual who complains of symptoms of disease. Perhaps it is appropriate to suggest that clinical histories as seen in teaching hospitals would be more useful if, in addition to the present excellent records of symptom development, there were also recorded observations of the patient's method of symptom presentation.

MEDICAL ASPECTS OF MID-TWENTIETH CENTURY MIGRATION AS GLEANED FROM MIGRANT SELECTION IN GREECE, WITH PARTICULAR REFERENCE TO AUSTRALIA AND THE SELECTION OF 2500 GREEK-AUSTRALIAN RURAL WORKERS.

By K. G. WATSON,

Medical Adviser, Intergovernmental Committee for European Migration, Athens.

THIS article describes some of the work performed by the Intergovernmental Committee for European Migration Liaison Mission in Greece. This work is an example of an attempt to solve the problem and attendant problems associated with the excess population within Greece. As a part of the solution to this problem, some 2500 Greek rural workers have been resettled in Australia under the auspices of a mass Australian Rural Workers Scheme. Certain aspects of the selection and transference of this group of rural workers to Australia are described.

Greece is a country of 51,182 square miles, which is roughly one-fifty-sixth the size of Australia. With a population estimated to be in the vicinity of 8,000,000, the immediate population density ratio in relation to Australia can be envisaged. Greece has a large surplus of persons in the productive age group. The rural workers selected for Australia were part of a movement on a "mass scheme" basis—that is, rural workers were selected without the necessity of having in Australia relatives or sponsors. Any rural worker within Greece could have applied for this scheme, and the selected rural workers were chosen on occupational, medical, social and security criteria.

The history of mankind has been a story of migration, which until now has been uncontrolled and effected without the aid of any international support or cooperation. In December, 1951, at the suggestion of the United States, the Belgian Government called an international conference on migration. Of the 23 nations which convened in Brussels, 16 voted to establish a Provisional Intergovernmental Committee for the Movement of Migrants from Europe. After the first year of operation, PICMME became the Intergovernmental Committee for European Migration.

Mid-twentieth century "mass" or assisted passage migration may be very broadly divided into three phases: the first phase is the selection, the second phase is the transportation of the selected migrants under controlled conditions, adequate medical, educational and recreational facilities being provided, and the third phase is the resettlement of these migrants into their new country.

Phase I: Migrant Selection.

Migrant Selection Procedure as Performed for the Selection of Rural Workers for Australia.

The selection of migrants implies two proceedings: an initial pre-selection (in Greece effected by the Intergovernmental Committee for European Migration) and later selection from amongst these pre-selected persons by the national selection officers representing the country of immigration.

As only rural workers were selected, the majority of the ICEM (Intergovernmental Committee for European Migration) processing was effected in country districts well removed from Athens, where the ICEM Liaison Mission has its headquarters. An ICEM migrant selection team would proceed to a selected rural centre in order to pre-select candidates who would be later presented to the Australian selecting team. Normally, approximately one week after the arrival of an ICEM team, the Australian selection team would arrive for selection of candidates who had already been pre-selected by the ICEM representatives.

An ICEM pre-selection team consisted of trained pre-selectors, a medical section and a documentation section, which instituted at the various local offices proceedings in order to collect such documents as are required by the

Australian Government—namely, local good conduct certificates, birth certificates, penal certificates *et cetera*.

Medical Procedure.

After the selection of a candidate as a rural worker the following procedure was carried out in regard to the medical pre-selection: (*a*) A routine physical examination recorded on the standard ICEM medical examination form. (*b*) Chest X-ray examination with a large film for all candidates over the age of twelve years, together with a fluoroscopic examination, or with a 70-millimetre microfilm for all children aged less than twelve years. (*c*) A Kahn test for every adult over the age of sixteen years. (*d*) A urine examination for all applicants.

All members of every family were examined, and no families were separated; the close dependants later travelled with the selected family heads. Blood which had been collected for the Kahn tests was transported by rail, bus or air to the ICEM laboratory in Athens by means of refrigerating ice-boxes. This ensured uniformity of Kahn test findings and enabled an accurate statistical picture to be compiled of the various percentage incidences of positive Kahn test results in the different regions of Greece. At every step adequate safeguards were maintained in order to prevent any subterfuge or substitution.

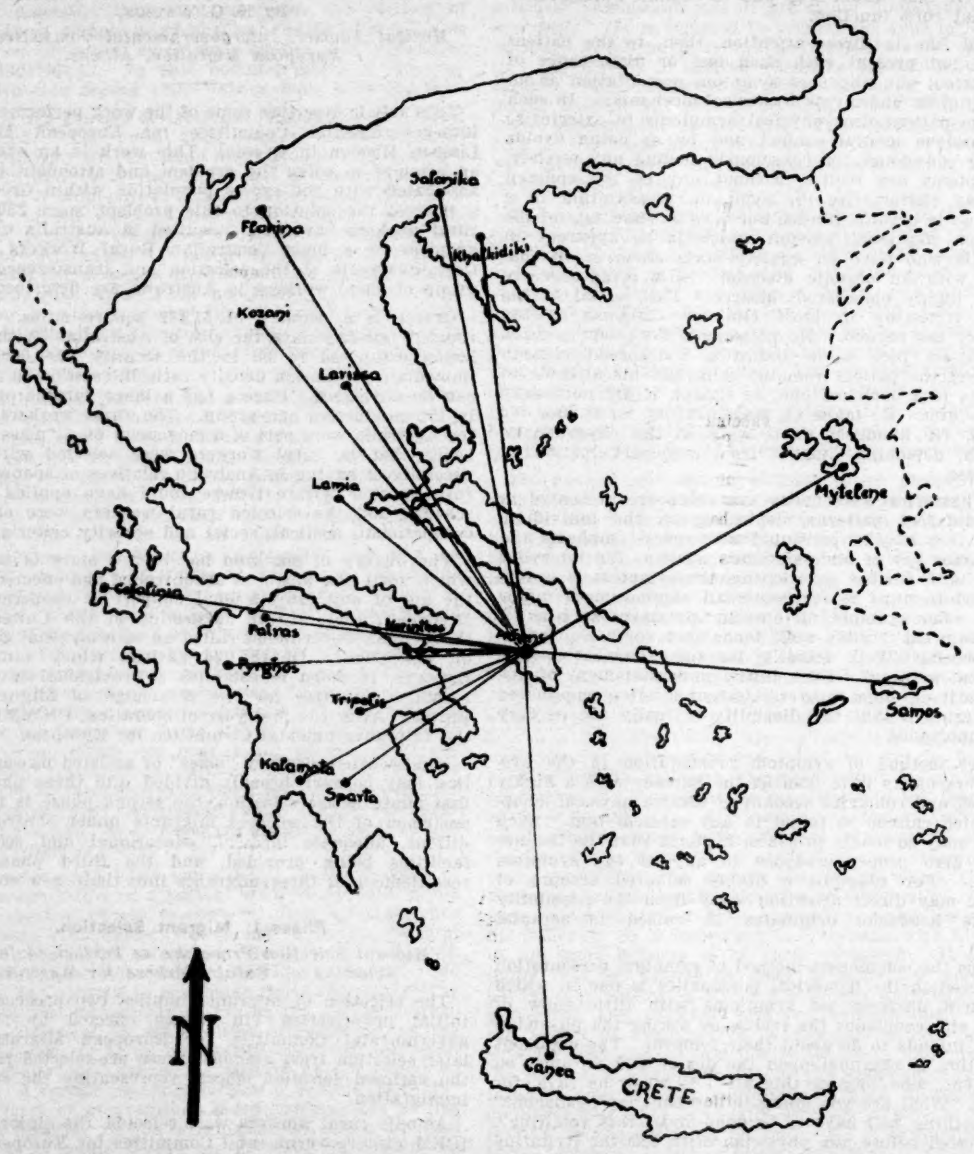

FIGURE I.
Map of Greece showing the main centres of emigration in the Australian migration programme from Greece, 1952-1954.

The causes of medical rejection at the pre-selection stage—that is, the stage of ICEM medical processing—were myriad and too numerous to describe in this article. All possible causes of medical unfitness were found and were designated as correctable or non-correctable. Letters of notification were sent to all rejected persons; those who were rejected for a cause designated as correctable received

a personal notification letter giving information concerning their cause of rejection and explaining that, provided this cause was remedied, ICEM would recommence their processing for emigration.

As described above, an Australian selection team would proceed to this area usually one or two weeks after the ICEM pre-selection. Candidates who had been pre-selected by ICEM were then accepted by the Australian selection officer and medical officer if they fulfilled the Australian criteria. This selection by the Australian selection team was made pending security clearance.

Phase II: Migrant Transportation.

According to shipping schedules, an accepted and security-cleared migrant would be called for embarkation.

Prior to embarkation a number of procedures were effected which may all be considered as part of the embarkation proceedings. These were: (i) a pre-embarkation medical health check, (ii) fumigation against foot and mouth disease, (iii) baggage control and arrangements (associated with foot and mouth disease fumigation), (iv) currency control and exchange, (v) orientation concerning shipboard life, and (vi) issue of visa.

Pre-embarkation Medical Check.

The pre-embarkation medical check consisted of the following: (*a*) A quick examination of the eyes, fauces and skin for any evidence of a contagious and/or infectious illness. (*b*) Routine vaccination against smallpox (an ICEM requirement). (*c*) Prophylactic injection of γ globulin into all children aged between six months and six years. (This is an ICEM requirement as a prophylaxis against a measles outbreak occurring on the migrant ships. Concurrently a survey is being compiled as to the efficacy of this procedure by the ICEM medical section.) (*d*) A Casoni survey of all adults over the age of twelve years conducted on behalf of the Australian Department of Health. (*e*) An interrogation with abdominal palpation of all adult females in order to detect those women who were pregnant. No pregnant woman of more than twenty-four weeks' gestation was to be embarked. Similarly, no children of less than six months of age were permitted to embark.

Fumigation against Foot and Mouth Disease.

Twenty-four hours prior to embarkation, fumigation of the passengers' personal clothing, shoes and cabin luggage was effected against foot and mouth disease in an endeavour to prevent the transference to Australia of the virus causing foot and mouth disease. The fumigation procedure consisted of exposure to formalin vapour under pressure at 75° C. for one hour in a pressure chamber. All shoes were scrubbed clean in a soapy solution containing formalin. *Pari passu* with this fumigation procedure, the migrants were also bathed and dusted with DDT powder in order to prevent the possibility of any personal infestation.

The transportation was effected on ICEM bulk chartered ships. ICEM escort officers were provided, and orientation lectures and classes concerning Australia were held during the voyage, along with English lessons, in an endeavour to equip the migrant for his new land.

Phase III: Resettlement.

The resettlement phase of migrants is normally effected by the country which is the migrant-receiving country. Australia may well be proud of the migrants' reception procedure and facilities as effected by the Australian Department of Immigration. I shall not mention any of the details except to say that each shipload of migrants is met by trained personnel in their respective fields—that is, social workers, employment officials and officials from the holding centre at Camp Bonegilla. From Bonegilla the migrants are directed to their new employment.

Medical Processing as a Benefit to the Community.

From the inception of ICEM in Greece until the end of February, 1954, a grand total of 17,966 persons was examined. This total included persons for all countries. During 1953 the keeping of statistics was commenced upon the incidence of positive Kahn test reactors within the Greek community. From the local records, a statistical analysis was made of the cases of tuberculosis detected, when they were assessed, and since May, 1953, statistics on all cases of echinococcosis have been formulated.

Incidence of Positive Kahn Test Reactors within Greece.

As a routine procedure a Kahn test was performed on all migrants over the age of sixteen years. Normally, if there was a "+" Kahn test reaction or a positive Kahn test reaction on first examination or a doubtful Kahn test reaction, the Kahn test was repeated. However, owing to the geographical difficulties it was not always possible to reexamine all the subjects concerned.

At the time of writing no figures existed on the prevalence of syphilis amongst healthy people within Greece.

The following comments may be made on Table I.

TABLE I.

Statistical Analysis of Positive Kahn Test Reactions until February 28, 1954, as Detected in ICEM Laboratory, Athens.

Area.	Number of Tests Performed.	Number of Positive Reactors Detected.	Percentage of Positive Reactors.
Athens	4537	92	2·02
Corinth	174	4	2·2
Dodecanese Islands	58	—	—
Kalamata	452	6	1·32
Kastoria	119	2	1·67
Kozani	648	4	0·61
Lavrion	201	12	5·97
Patras	470	7	1·48
Pyrgos	485	13	2·68
Salonika	2781	23	0·84
Sparti	467	6	1·28
Syros	87	2	2·3
Tripolis	530	6	1·13
Volos	44	1	2·2
Total	11,053	178	1·61

As can be seen from the table, a total of 178 positive Kahn test reactors was demonstrated from 11,053 examinations. This represents an over-all percentage incidence of 1·61. In addition to the 178 positive reactors there were some 63 doubtful reactors, who have not, until the time of writing of this article, been reexamined. Considered as a percentage when compared with the total number of positive reactors, these 63 doubtful reactors would represent 35% of the total number of positive reactors. The impression gained from reexamination of doubtful reactors would be that some 50% would yield a positive reaction on reexamination. This would imply that the percentage incidence of positive Kahn test reactors in the Greek community from a selection of 11,053 examinations is approximately 1·9.

2. It is impossible to conclude that the above figures are representative for the whole of Greece, notwithstanding the fact that the people tested came from throughout the whole length and breadth of the country. The following factors are of note: (i) It is now common knowledge that a requisite for medical selection for emigration implies a negative blood serological reaction. The percentage of positive reactions has decreased over the past six months, and this may be due to the fact that positive Kahn test reactors remain away to have treatment and do not undergo processing until their Kahn reaction has become negative. (ii) Certain of the above figures were obtained from people who were in the main refugees to Greece and are thus not representative of the Greek population. (iii) Malaria still occurs in certain areas, and this could lead to false positive reactions. (iv) Rather indiscriminate penicillin therapy has been given in Greece, and those persons with

positive reactions who were unaware of any implication of past venereal infection had perhaps had their initial infection masked by penicillin.

3. The figure of 2·02% in Athens is perhaps a true indication of the prevalence of positive Kahn test reactors within this area. Amongst the large number of people tested (4537) were many Greek refugees from various lands, the presence of whom would help to swell the over-all percentage increase of positive Kahn test reactors detected in Athens.

4. A very large percentage incidence as detected in the figures for Lavrion is due to the fact that Lavrion is a refugee holding centre; the impression gained from examining this body of people was that a large number of Greek/Roumanians present positive reactions.

5. The low incidence of positive Kahn test reactors from Salonika, which is the second city in Greece, is explained by the fact that the majority of Kahn tests were performed on rural workers who came from the outlying districts of

TABLE II.

Total Embarkation Statistics: Australian Mass Rural Workers Scheme ex Greece, from January 29, 1953, to March 22, 1954.

Area of Origin.	Number of Cases.	Number of Persons.
1. Attica (District of Attica)	506	668
2. Kalamata (District of Messinia) ..	154	249
3. Kozani (District of Kozani)	189	268
4. Lamia (District of Thiotis)	21	28
5. Larissa (District of Larissa)	48	69
6. Mytilene (District of Mytilene Island)	45	71
7. Patras-Pyrgos (District of Achaia-Iliaa)	187	388
8. Samos (District of Samos Island) ..	2	8
9. Sparta (District of Lakonia) ..	70	217
10. Salonika (District of Northern Greece)	548	785
11. Tripolis (District of Arkadia)	161	186
Total	1931	2932

Salonika and who were examined as candidates for the Australian Rural Workers Scheme.

When a reaction was found to have been definitely positive the following procedure was instituted. The person concerned received a routine personal letter of notification from ICEM explaining that he had been found to yield a positive Kahn test reaction, and that until such a reaction was further confirmed and treatment had been received the prospective migrant had no further chance for migration. Simultaneously confidential lists were submitted to the Department of Hygiene in Athens and to the health centres covering the districts from which these migrants originally came.

Tuberculosis.

The over-all percentage rate of active cases of pulmonary tuberculosis was found to be 0·5 out of a total of 13,500 people examined up to December 31, 1953.

The statistical analysis of the cases of pulmonary tuberculosis was based upon reports derived from the Athens Chest Institute and compared quite favourably with the over-all statistical incidence rate of 0·6% estimated by that organization.

Many prospective migrants with active tuberculosis were completely unaware of their infection and would not have become cognizant of their need for treatment if they had not applied for migration to some country. The above-mentioned figures have not included cases of fibro-tuberculosis (the majority undoubtedly in the healed inactive phase).

The problem of pulmonary fibrosis and tuberculosis in the healed fibrotic stage is peculiar to migration. It is a very vexed question. From the country of emigration such people receive radiological reports indicating that they are "healed" and "cured". The doctors selecting for the countries of immigration have usually received strict instructions that they are not to accept anyone who is likely to become a burden or charge upon the community of the country of immigration. Consequent to this principle the health standards of the immigrant-receiving countries have been designed to prevent the national selecting doctors from selecting any person suffering from pulmonary tuberculosis unless such a person exhibits the minimum of lesions. Even so, there is not always absolute conformity of opinion and selection. Persons have been rejected at the pre-selection level even though they have been classified by the radiologists from the Athens or Salonika Chest Institute as having "pulmonary fibrosis", this fibrosis being of an apical type which experience has shown to be unacceptable by the Australian physicians or radiologists. Certain other persons who have been considered fit enough for presentation by the ICEM medical pre-selection staff were still rejected.

The interpretation of such cases is indeed a problem peculiar to migration, and for a medical staff working in a country of emigration it is difficult to explain to a prospective migrant that, even though the local specialist radiologist considers him fit, he is not accepted or acceptable for the country of his proposed migration.

Perhaps it is significant that the United States Public Health Service has laid down more stringent regulations on the selection of persons with pulmonary fibrosis who will endeavour to proceed to the United States under the auspices of the United States *Refugee Act* of 1953.

Echinococcosis.

Greece is a country in which a large number of cases of echinococcosis are met with annually. The reports received from the Greek Department of Hygiene show that 20 persons suffering from echinococcosis died during the year 1952, there being a total of 584 hospital admissions for this disease. Assessed statistically against the estimated total population of Greece for that year, the figure represents 13·3 cases per 100,000 of population. This is in excess of the figure of 7·37 cases per 100,000 quoted in a memorandum written by Professor Macca in 1952 and submitted on behalf of the "Committee for the Protection of Hydatid Disease under the auspices of the Greek Red Cross". According to Professor Macca, Greece is now the country showing the greatest incidence of echinococcosis next after Uruguay; Australia and New Zealand were excluded from this statement, as, according to Professor Macca, the reports from these two countries and statistical analyses were not clear and were conflicting. According to this memorandum, an analysis of all admissions to large surgical clinics in Greece for treatment showed that some 1·8% to 2% were due to echinococcosis. Between the years 1900 and 1947 a total number of 10,723 persons were operated on for hydatid disease.

Fourteen cases of echinococcosis have been detected, including three cases of silent pulmonary cysts, among the 17,966 persons examined by ICEM.

From September 1, 1953, to March 3, 1954, a Casoni survey was carried out on all rural worker migrants over the age of twelve years who embarked under the auspices of the mass Australian Rural Workers Scheme. A total number of 1400 Casoni tests was performed with indefinite results, and only one actual positive reactor was detected.

As was the case with tuberculosis, prospective applicants possessing silent pulmonary cysts requiring attention were referred and received medical advice concerning treatment.

Entamœbiasis.

Greece has a population of whom a large proportion apparently carry, quite symptomlessly, the cysts and trophozoites of *Entamœba histolytica*. Various figures concerning the percentage incidence rate of entamœbiasis were given. These figures ranged between 10% and 20%, and the largest available survey was that effected on migrants emigrating to the United States by doctors working in association with the United States Public Health Service. An estimated 19·6% incidence was detected by means of rectal lavage. ICEM, Athens, has been

examining candidates proceeding to Canada, and has performed stool examinations on them. The candidates have been in the main urban workers and domestics, and after a total of 471 stool examinations 53 persons were shown to be infected with *Entamœba histolytica*. This percentage incidence of 11·2 was not unduly high.

Eye Conditions.

Trachoma.—There is still a large percentage incidence of trachoma throughout Greece. According to the report for the year 1951 compiled by the Greek Department of Hygiene, the general percentage incidence of sufferers from trachoma amongst all the persons reporting to the various eye clinics was 9·1. During 1951 a total number of 3159 amongst 21,030 persons reporting to the anti-trachoma clinics throughout the whole of Greece were found to have trachoma. From the experience of the ICEM Greek Liaison Mission it is indicated that a greater percentage of cases of trachoma come from the northern areas of Greece—that is, Macedonia, where trachoma has constituted 2·1% of the causes of rejection. All persons suffering from trachoma (as part of the physical examination routine eversion of the eyelids was mandatory) were rejected and referred for treatment.

Pterygia.—Pterygia leading to cosmetic impairment also resulted in a large number of persons being rejected; in such cases, of course, the condition was designated as correctable, and those concerned were later presented to the national selecting physicians after corrective therapy.

Miscellaneous.

A perusal of the reasons for rejection shows that many people possessing such conditions as rheumatic heart disease had been performing work above their physical capabilities. Such people always received advice and were (if possible) directed towards more suitable occupations. Similarly, the parents of children with such minor conditions as undescended testes received advice concerning treatment. Hernias were corrected surgically before acceptance of the person affected by ICEM. Owing to the insistence by the Australian medical officers that no persons with hernia be sent to Australia, some persons with very early herniation or weakness which was not yet requiring surgical intervention were referred for treatment.

A large number of pilonidal cysts and sinuses were seen and in general emphasized the axiom that such sinuses are a prerogative of dark-haired people.

Conclusion.

The standard of work performed by the medical section of ICEM in the pre-selection of migrants has been proved. From May, 1953, to February 28, 1954, a total number of 3686 applicants were presented for medical selection under the Australian Rural Workers Scheme. Only a total of 63 were rejected outright for physical reasons, and a further 453 were deferred for a variety of reasons; the majority of deferments related to X-ray examination; others were for minor medical and surgical treatment. As an explanation of this low medical rejection rate ICEM processing statistics indicate that 21% of applicants did not reach the presentation phase of processing—that is, they either failed to complete their processing and medical examination or were considered unfit by ICEM processing and rejected.

When the statistical work record of an individual ICEM doctor shows a monthly output of 300 to 330 completed cases, then the cost of movement, staff and organization may be realized. The Australian medical officer does not have to complete in detail the lengthy routine of the ICEM medical examination form, nor does he collect blood or perform urine tests in field processing; so that within a set period an Australian selecting physician can examine three times as many applicants as does an ICEM physician who performs the initial pre-selection. The accent of the ICEM medical examining has been on thoroughness, accuracy and high standards of pre-selection.

With the organization of an international body with experience in migration, having representatives throughout both migrant-supplying and migrant-receiving countries, uniformity of opinion, adequate control of migrant selection and coordinated action of medical services can be effected. Only an international organization could set up the administrative services involved in migrant processing as it has been effected in Greece; here the majority of work has been performed in rural areas. ICEM has done the work of an honest broker, being the intermediary in the source, supply, selection and transportation of migrant material from Greece. In affiliation with the member nations it has been able to control and administer migrant processing in Greece with the aid of various Greek governmental departments.

Acknowledgements.

I wish to make acknowledgements to Dr. R. Risquez-Iribarren, Chief of the ICEM Medical Services, to Dr. Triantafillou, Director-General of the Greek Department of Hygiene, and to the Australian selecting medical officers and radiologists from the Australian Commonwealth Department of Health, with whom I have worked in Europe.

THE FRICTION FACTOR IN SKIN DISEASE.

By DENIS M. CLARKE,
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IN most text-books on dermatology stress is placed on the need for careful observation of the primary and secondary lesions which typify each disease and its complications. The early dermatologists actually classified diseases of the skin upon the purely morphological basis of the types of primary lesions, ætiological classification being introduced only later.

Microscopic examination of diseased skin by the early masters of dermatology and their followers revealed the specific and non-specific alterations in the disordered tissues and laid the foundations of modern dermatopathology. The advances of physiology have elucidated some of the relationships between local or generalized disorders of function and the skin, while bacteriological studies have defined the parts played by parasites of bacterial, fungal and protozoal nature. More recently attempts have been made to estimate the causative or contributory importance of allergic, psychological and climatic factors in the production of skin disease. Furthermore, to read a dermatological text-book of only fifteen years ago is to realize what advances in treatment have taken place in that short time, chiefly through the discovery of new remedies rather than through new uses for older ones. With all this progress in the fields of diagnosis and management there is undoubtedly a tendency to overlook or belittle the importance of the clinical appearance of the elementary lesions and their immediate causation; a tendency to concentrate on laboratory investigation and the interpretation of the results of tests; to hasten to the therapeutic armamentarium for a remedy of real or imagined electromagnetic, hormonal, antibiotic or antiallergic powers—at the same time neglecting to consider the exact means by which the essential primary and secondary lesions have arisen.

In the eczema-dermatitis group of disorders it is often considered adequate to apply an over-all diagnostic label such as "eczema", "eczematous dermatitis", "formalin dermatitis", "infantile eczema", and then to pay little attention to the clinical appearances of the presenting lesions and to the factors which cause these appearances to change from time to time. This is not enough. For a more complete understanding of the progress of each malady and for its more effective management one must attempt to assess the actual precipitating factor which produces a particular type of lesion at a particular time in the particular site. Is the precipitating factor contact

with an irritant or allergen? Is it due to over-treatment, as in medication dermatitis, or to inadequate treatment? Is it due to an internal or constitutional factor (as in pompholyx or discoid eczema, diabetes and the reticuloses)? Is it due to psychogenic factors? Is it due to secondary infection or to autosensitization? Finally, is it due entirely or mainly to self-applied friction?

The Stimulus to Self-Applied Friction.

Why do patients rub and scratch? The answer to this question at first sight seems too simple to consider at any length. The obvious answer is: because they itch. But this raises the problem of the itching threshold. The following observations indicate that this threshold varies. Debilitated or mentally defective patients may have what is ordinarily a most pruritic skin disease and yet not itch. This is seen, for example, in what is called Norwegian or crusted scabies. At the other extreme, patients will complain of great itching in what is generally a non-itching skin disorder, such as psoriasis, a carcinoma or mole. This is especially true when they are worried about the nature of their condition or its prognosis. Reassurance may promptly abolish the pruritus. Delusion of parasitosis (acarophobia), and cancerophobia or syphilophobia, the "guilty conscience syndrome" after exposure to venereal risk and other mental upsets may cause itch in the absence of any organic disease. Itching in these cases may lead to such a degree of self-applied friction that a localized or widespread friction dermatitis may be produced. Apart from such examples of psychogenic itching, many other abnormal emotional states give rise to itching without organic basis. Just as "functional" headache, backache, dyspepsia, diarrhœa, dysmenorrhœa and a host of other symptoms may arise through purely psychogenic mechanisms, so also may itching. This is particularly so in ano-genital pruritus. Add to these non-organic causes of itching all the really irritable skin diseases with an organic basis, and one has a long list of causes for itching and thus for the production of friction dermatitis.

Much of the rubbing and scratching may be done at night, when the patient is unconscious or only half-conscious of what he is doing. Even during waking hours he or she may not be conscious of repeatedly rubbing or scratching a particular area of skin. The habit of rubbing and scratching becomes so ingrained that friction may be applied to the skin even when the part is not irritable. The habit becomes a sort of "tic", to be compared with the sighing dyspnœa of cardiac neurotics, and the coughing and hawking habits of people with "weak chests", nail-biting, nose-picking and other obsessional habits.

It is not intended to convey the idea that the majority of patients have non-organic or psychogenic causes for their itching and its consequent friction, but that such causes account for quite a proportion—at least a third—of all cases of itching and friction dermatitis.

Friction — A Neglected Ætiological Factor.

The standard texts generally make some mention of the unfavourable effects of friction from clothing and scratching, but usually inadequate stress is placed upon the actual appearance and variety of those lesions which result from self-applied friction. It is frequently taken for granted that patients seek relief from itch merely by scratching. This is not so. True, they do scratch. That is, they employ the free border of their nails to combat itch. Just as frequently they use their palms and the pads of their fingers, the backs of their hands, their knuckles and heels to rub the itching parts. And they rub hard. A linen glove, a few layers of bandage, dressings or clothing are no barrier to this form of friction. It is useless, for example, merely to put gloves on a child with eczema to lessen the effects of rubbing. This provides an even harsher surface with which to damage the skin. It is hard rubbing (and scratching) often repeated which brings about many of the clinical lesions of so-called "eczema", "neurodermatitis" or "atopic dermatitis". The amount of friction necessary to produce these changes varies from patient to patient and from one site to another, depending upon the irritability of the skin at the time, just as the vasomotor changes in the "triple response" of Lewis vary from time to time and from patient to patient, and in the same way as the results of skin tests with allergens will vary in the same patient at different times. In general an area recently affected with an inflammatory dermatosis will respond to a noxious stimulus more than other areas in the same patient and will do so for some time after cessation of that dermatosis.

Few would deny that the physical sign of localized lichenification betokens long-continued friction; that linear excoriations form the classical sign of *pediculosis corporis* (the louse produces the itch, but it is the patient who produces the rash); that urticarial weals follow firm stroking in patients with dermographism, and that scratching may introduce infection. But it does not seem to be adequately stressed that there are many other types of lesion which may be due to self-applied friction, especially of that hard-rubbing sort referred to already.

The Lesions Produced by Friction.

That erythema follows a simple episode of hard rubbing or scratching upon normal skin is obvious from simple observation of one's own skin. This erythema lasts a variable time and will become continuous with frequent repetitions of friction.

Sufficient "trauma" of any sort—physical, such as friction, chemical or infective—brings about the familiar dynamic changes of inflammation and repair. What parts in these processes are played by histamine, H-substance and other postulated materials released at the site is still a matter of dispute, although it is of interest to recall that Lewis postulated the existence of H-substance on the basis of experiments which involved firm rubbing of the skin and the observation of the reactions of cutaneous blood vessels to varying strengths of stroking.

Now, whatever may be the immediate causes of these changes on the part of epidermal and dermal structures during inflammatory responses to various insults, the histologically observable changes will be much the same, whether the inflammatory agent produces its effects from outside the skin, as with physical or chemical trauma, or from the dermis by way of the blood vessels or other supporting tissues, as is postulated in the case of allergic reactions of internal origin, drug eruptions and other toxic eruptions. A sufficiently acute reaction produces dermal and epidermal œdema. This may involve the *stratum corneum* and prickle cell layer so as to disrupt the cohesion of cells and produce vesicles, as in acute sunburn. These vesicles may occur at various levels of the epidermis and be of various sizes. Now the intraepidermal vesicle is considered to be the essential lesion of eczema, but obviously it may occur in a variety of non-eczematous disorders—for example, in herpes or tinea. However, actual unbroken vesicles are not so frequently observed with the reaction produced by simple friction on the skin, because any vesicles formed in the epidermis tend to be broken by the friction applied. This rupture causes weeping. Even without vesicle formation abrasion of the epidermis down to the prickle layer results in oozing and weeping. The tissue fluid which escapes may be mixed with coagulable plasma and dry out to form crusts.

In the eczema-dermatitis group of disorders, when weeping occurs it is nearly always simply the result of rubbing or scratching, though chemical irritation, allergic reactions to treatment substances and intertrigo between opposed surfaces are sometimes the cause. After any severe or chronic inflammation of the skin, scaling in some form is almost invariable.

The collection of œdema fluid and inflammatory cells in the dermis gives rise to a diffuse or localized swelling of the part. If these collections of œdema and cells are localized, papules or local swellings are formed.

It is possible to produce by friction alone erythema, œdema, papules, induration, vesicles, weeping, crusting, scaling and lichenification—in other words, the classical

findings of "eczema" and "neurodermatitis". These changes are all reversible. At times, however, when the constant frictional trauma has been applied for years, irreversible fibrotic changes take place in the collagen to give the skin a permanent leathery hardness and thickness, seen at times on the face and limb flexures of those with long-standing "flexural eczema" or "atopic dermatitis".

Nomenclature: "Eczema" and "Eczematization".

When such physical signs as those just described arise without the prior existence of any apparent skin disease, then the resultant clinical picture will be given a title depending upon the particular views of the observer. Thus one not familiar with the peculiarities of dermatological nomenclature might be surprised at the number of diagnoses given by a group of dermatologists to a case of this sort ("eczema", "neurodermatitis", "atopic dermatitis", "asthma-eczema syndrome", "flexural eczema", "Besnier's prurigo", "eczematous dermatitis", "allergic eczema", and so on). Such a variety of names and the opinions which they connote are understandable when it is realized that the protagonists of any one hypothesis concerning the ætiology of this group of disorders find it impossible to support their hypothesis completely by experimental evidence or by convincing therapeutic results based upon their ætiological theory.

On the other hand, when there has been a preexistent dermatosis and these same physical signs become superadded, the exuberant nomenclature will be pruned down to one or two descriptive words, of which the most popular will almost certainly be "eczematization" or "secondary eczematization". What causes this secondary eczematization? In most cases it will be friction. Irritation by or allergic reactions to the local medication may also be the cause of secondary eczematization. At times the primary condition—for example, contact dermatitis—may have subsided, but the secondary eczematization due to self-applied friction may continue. This transition, frequently brought about by nervous or psychogenic factors, accounts for the persistence of many skin disorders beyond their natural course or despite adequate treatment.

So, whether we are looking at the "essential" primary type of this clinical picture (whatever it may be called) or at the secondary type, after all the physical changes are all that we can see, no matter what we call them, and these physical changes are usually the result of friction. Perhaps the best title to use in such cases, because it has at least the merit of accuracy in describing observed facts, is "friction dermatitis".

"Eczemas" Not Related to Friction.

During the course of certain inflammatory dermatoses restricted to one or a few primary sites there may suddenly appear quite spontaneously a crop of lesions at distant sites on the skin. These "metastatic" lesions have the clinical features of eczema—namely, pin-head to larger sized vesicles, vesico-papules, papules, oozing and erythema. Some examples of this phenomenon are the following: the "autolytic eczema" which explosively erupts on the face, upper limbs and trunk during acute phases of ulceration and dermatitis of the lower part of the leg, especially as a result of occlusive dressings or unsuitable local applications; the dermatophytids; coccal "ids"; generalized eczematous eruptions following localized medication dermatitis (for example, from the local use of sulphonamides, penicillin, local anæsthetics and flavines); and finally the discrete grouped papulo-vesicular lesions which suddenly appear on distant parts of the skin surface during the course of the common forms of localized "eczema" or "neurodermatitis".

The papular, vesicular and plaque-like lesions of "discoid" and "patchy" eczema also arise *de novo* without initial friction, as do the vesicles of pompholyx (dysidrosis) and vesicular and multiform lesions of *dermatitis herpetiformis*. Of course, friction dermatitis (secondary eczematization) may be superimposed on all these; but friction at the widespread focal sites plays no part in the immediate causation of any of these forms of eczematous lesions.

Discussion.

In the course of a disease of the "eczema-dermatitis" group there may arise lesions which are solely due to friction, lesions with secondary changes due to friction, and lesions which are not related to friction. Success in diagnosis and treatment will depend in large measure upon the differentiation of such lesions. Obviously no external or internal remedy will cure a dermatosis entirely due to self-applied friction or largely perpetuated by such trauma if the patient just goes on rubbing and scratching his skin. On the other hand, the mere provision of antipruritics, X-ray therapy and sedatives, and the control of rubbing and scratching, is by no means adequate treatment of an itching dermatosis in which friction plays merely a secondary part—for example, a secondarily eczematized drug eruption or scabies. It is therefore of prime importance to recognize the areas of simple friction dermatitis and to distinguish these areas from those due to other causes. It is also essential to point out to the patient, or to his parents, how such lesions are produced and what part his own rubbing and scratching play in their production.

Failure for various reasons, avoidable and unavoidable, to manage this factor of self-applied friction accounts for the prolongation and aggravation of many cases of the eczema-dermatitis group of diseases.

There is nothing new in the views expressed in this presentation. An attempt has merely been made to place the factor of self-applied friction in its proper perspective.

Summary.

1. Inadequate stress is placed on the need for careful observation of primary skin lesions, especially in the eczema-dermatitis group of diseases.

2. Self-applied friction is responsible for many of the lesions in this group.

3. Recognition of the importance of the friction factor and of the lesions produced thereby is important in accurate diagnosis and management of these dermatoses.

SOME ASPECTS OF THYROTOXICOSIS.[1]

By C. A. C. LEGGETT, M.B.E., M.B., M.S., F.R.A.C.S., F.A.C.S.,
Brisbane.

> . . . and if so be any man object unto me that this, my discourse is only compilede together of certayne rapsodyes of the antique chyrurgians, I willingly here confes and acknowledge that in this Treatise there is verye little, or nothing at all, of myne own Inventions . . .
>
> JACQUES GUILLEMEAU, A.D. 1594.

IN the early days of medicine Hippocrates and his followers always adopted a similar attitude towards a clinical problem. They considered first what they called "phenomena", which was really a consideration of the symptoms and signs of a disease. Secondly, they considered certain aspects of the case under what they called "judgement". Judgement really concerned the probable course of the disease. Then they discussed "general propositions", which concerned the general treatment of a patient as to rest, diet, climate, and similar aspects. Last of all there were the detailed and technical aspects of treatment, and this was called "craft". I wish to deal mainly with the things which were considered under the heading of phenomena especially in relation to diagnosis of thyrotoxicosis, and there will be little reference to the technical side of the treatment of thyrotoxicosis.

[1] A post-graduate lecture, delivered under the auspices of the Post-Graduate Committee in Medicine of the University of Queensland, on May 20, 1954, at Toowoomba.

The Origin of Hyperthyroidism.

The exact ætiology of thyrotoxicosis is unknown, but it is useful to consider that probably the disease is initiated by various types of external stimuli which act on the receptor organs of the body. One sees undoubted cases of thyrotoxicosis in which the clinical evidence of the effect of external stimuli in the initiation of the disease is very strong. In other cases one has certain clinical evidence that crises occurring within the body itself may initiate hyperthyroidism. Stimuli therefore from various interoceptors and exteroceptors are relayed to central perceptors, and in this regard one must place these perceptors at high level in the central nervous system. From the higher centres of the brain it is possible that stimuli reach the supraoptic and paraventricular nuclei of the hypothalamus, and impulses are then relayed to the anterior pituitary complex. Excess of thyrotropic hormone circulates as a result of these stimuli and there is stimulated an overactive state of the thyroid gland. In the normal subject there is reason to believe that there is a certain balance between the levels of thyrotropic hormone and the levels of the thyroid secretions in the blood-stream, and that a delicate balance exists between pituitary and thyroid secretion. This may be of importance in relationship to the treatment of thyrotoxicosis by various drugs of the thiouracil group.

Physiology of Iodine in Relationship to the Thyroid Gland.

Ingested iodine is absorbed into the blood-stream, and it is certain that of all the tissues of the body the thyroid gland has by far the greatest affinity for the circulating iodine which is taken up by the thyroid gland with great avidity. In the acinar cell of the thyroid gland free iodine is liberated by a peroxidase process, and this free iodine is united with the amino acid tyrosine to form diiodotyrosine. It is thought that this peroxidase process within the acinar cell, which is an important step in the formation of thyroxine, is interfered with by the drugs of the methylthiouracil type. From the diiodotyrosine is formed thyroxine, and at this stage in the development of the thyroid secretion the sulphonamide drugs such as sulphathiazole have their point of action. Thyroxine is combined with thyroglobulin in the thyroid gland, and this combination is thought to be the colloid which we know fills the central portion of the acinus of the thyroid. In health, the normal daily production of thyroxine has been established as being 0·33 milligramme.

The Effect of Thyrotropic Hormone on the Gland.

The thyrotropic hormone first of all appears to aid in the mobilization of the thyroxine contained in the colloid of the gland, and thyroxine-laden droplets are seen to pass through the substance of the cubical cells lining the thyroid acinus. These thyroxine-laden droplets pass directly into the very rich capillary network of the gland and then pass directly into the blood-stream and so reach the tissue cells. It is thought that the thyroxine acts as a direct catalyst in the respiratory processes of the tissue cells and increases the activity of the respiratory enzymes. The thyrotropic hormone, in addition, regulates the general development of the thyroid gland, which results in increased blood supply and general hypertrophy and hyperplasia of the tissues of the thyroid gland. It is thought that the general enlargement and increase in the vascularity of the thyroid gland during treatment with excessive doses of the thiouracil group of drugs are due to an uncontrolled and excessive thyrotropic hormonal secretion.

Some Aspects of the Clinical Pathology of Thyrotoxicosis.

The Gland in Thyrotoxicosis.

Firstly let us consider the uniformly enlarged thyroid gland. I consider the finding of a diffuse enlargement of the thyroid gland of major importance when making the diagnosis of thyrotoxicosis in a young person. In the older group of patients with thyrotoxicosis or suspected thyrotoxicosis one does not always find thyroid glandular enlargement. I always suspect a prior diagnosis of thyrotoxicosis if in a young person the gland is not obviously enlarged. In relation to this glandular enlargement I should like to stress the fact that increased vascularity should be considered of prime importance in making the diagnosis. But it is important to know whether the patient has had previous treatment directed towards the relief of thyrotoxicosis, because the patient may have had one of the thiouracil drugs, and the gland may show obvious increase in size and vascularity due only to the administration of an antithyroid drug. In some thyroid glands the normal text-book contour of the gland is departed from, and the greater bulk of the gland lies in the region of the isthmus. Actually a true isthmus does not exist in this type of patient. In a relatively long and thin neck, a patient with a normal thyroid gland mainly concentrated in the isthmus area will appear to have enlargement of the thyroid greater than the normal limits, but actually it is only an anatomical illusion. During the examination of the thyroid gland I pay the greatest attention to the inspection of the gland during speech and during deglutition.

The Solitary Thyroid Nodule.

The apparently solitary thyroid nodule may be only a clinically prominent nodule in what is fundamentally a small colloid goitre, becoming nodular. The clinically solitary nodule may be a true neoplasm, usually an adenoma of the thyroid gland, and at this point it may be useful to remember that there is a definite percentage of these patients who show malignant changes in relationship to this true neoplastic nodule. In my experience it is rare for a solitary thyroid nodule to be the site of the toxic process.

Nodular Goitre.

The old nodular goitre may be toxic in all sizes; but I have been struck by the clinical observation that most of the old nodular goitres which now show some evidence of toxicity are the relatively small type. The very large nodular goitres in my experience have not been conspicuous by their toxicity. I have found them, of course, the sites of extensive degenerative changes with cysts, areas of calcification, hæmorrhage, *et cetera*. In most cases patients with toxic nodular goitres have had the goitre for many years, probably at least fifteen years, and most of the patients are thirty-five years of age or older. With increasing age there is increasing suspicion of the nodular goitre as causing toxic changes in the cardio-vascular system. I have not seen a toxic retrosternal goitre, but I have no doubt that it occurs on rare occasions.

Alterations in Metabolism.

In thyrotoxicosis the appetite may be affected by the age and the mental state of the patient. Not all patients have increased appetite in thyrotoxicosis. But if a young person with a normal, healthy appetite begins to suffer from hyperthyroidism, his appetite is often increased very considerably and results in a very large caloric intake. At the beginning of the illness there may actually be gross increase in appetite and consequent increase in weight, in spite of the fact that the basal metabolic rate is raised. In a delicate type of person, especially in the older age group, or if the mental state is normally one of the depressive type, then the appetite may be poor in spite of increased metabolic requirements. I have not been struck by the frequency of diarrhœa as a symptom of thyrotoxicosis; but that may be because severe cases of thyrotoxicosis are fairly rare at the present time, especially in Queensland. It may be worth while mentioning at this point, however, that sluggish bowel movement and habit are very common in my experience in association with hypothyroidism.

Let us consider now the caloric requirements of a patient carrying on his normal occupation, with thyrotoxicosis of the order of an increase of 75% of the normal basal metabolic rate. If the basal caloric requirements are 1500 Calories and the metabolic rate is increased 75%, then the patient will require a basal intake of 2625 Calories. If the patient is in addition engaged in moderately hard work, a 50% increase for this work should be added, which

brings the total caloric requirement to 3937 Calories. In addition, in thyrotoxicosis, there is a good deal of wastage from inefficiency and excess muscular movements *et cetera*. It is probable that such a patient may require 6000 Calories per twenty-four hours to cover his requirements. This is a very large caloric intake, especially in hot climates, and it is easy to see how caloric requirements will lag behind intake and the weight begin to fall.

When I consider the diagnosis of thyrotoxicosis I go into these metabolic aspects very carefully, balancing the appetite requirement, the metabolic rate of the patient, and the weight fluctuations during the period of the alleged illness. During treatment of thyrotoxicosis, these foregoing facts are of great importance either in the preparation for surgical treatment or in medical treatment. It is important that the conditions of the patient are so arranged as to rest, Calorie intake and specific treatment that the patient is gaining in weight and is in a relatively positive metabolic state prior to any surgical treatment.

The patients with thyrotoxicosis are usually in a state of negative protein balance and show creatinuria. The diet during treatment of thyrotoxicosis should be liberal and varied, and the protein intake should be of high biological value including the important substances of lactalbumin, ovalbumin, ovovitellin, casein and the various meat proteins. These will counter muscle wasting, and it is well to remember that most vegetable proteins are of low biological value. The thyroid hormone lowers the glycogen reserves in the liver, heart and muscle, and therefore the patient should be given ample carbohydrate in the diet to supply Calories and to act as protein sparers.

In thyrotoxicosis the patient has a disordered thiamine metabolism. He uses more, wastes more and stores less thiamine in the liver, and I think it is wise therefore to give adequate dosage of the vitamin *B* group. The metabolism of all vitamins is probably accelerated and the requirements of the patient are increased accordingly. Calcium and phosphorus excretion in thyrotoxicosis, especially the severe forms of the disease, is increased very considerably, and therefore the increased calcium of milk foods is important in the diet.

Basal metabolic rate estimations have some place in the management of patients with thyrotoxicosis; but it is essential to remember that, as far as diagnosis goes, metabolic rate estimation is only indirect evidence of thyrotoxicosis. Moreover, the test is essentially a fallacious one and not sound evidence of the severity of the disease in any particular case. In addition to that, it is not a reliable test for comparing the severity of the disease from patient to patient. It has some value in cases of masked thyrotoxicosis, in gathering evidence in the difficult border-line cases, and post-operatively in the estimation of the possible requirements of thyroid gland by mouth. In addition, it is of great value during the treatment of patients with thyrotoxicosis by the antithyroid drugs. Occasionally both patient and referring doctor place great reliance on the basal metabolic rate estimation, and I am certain that some of us have placed too great reliance on this form of investigation in past days. Basal temperature estimations are made fairly frequently in determining ovulation times, and I think that basal temperature estimations in thyrotoxicosis may be of some value. It would be of great value in the diagnosis of thyrotoxicosis if the organic iodine content of the blood could be readily estimated.

Eye Signs in Thyrotoxicosis.

Firstly let us deal with lid retraction. The sign of lid retraction was known as Dalrymple's sign. At this stage I should like to point out that there is clear distinction between exophthalmos and lid retraction. It is probable that lid retraction which is constant is a good sign of thyrotoxicosis. There are two types of lid retraction, the spasmodic type of lid retraction and the constant type. The act of staring produces the spasmodic type, and this effect may be eliminated when one is testing for lid retraction. This is best done by observing the patient after he has been looking at a distant object. The lid retraction which is so prominent a feature of toxic diffuse goitre is essentially constant. Constant lid retraction is also found in severe myopia, occasionally in brain stem lesions and as a rare congenital defect. It is probable that lid retraction varies with the severity of the disease and most commonly disappears after thyroidectomy. Normally the upper lids rest one to three millimetres below the limbus, and lid retraction may be said to be present if the upper lid margin rests at or above the upper edge of the iris, and a band of sclera is visible above the pigmented area. If there is a band of sclera showing below the iris there is evidence in favour of exophthalmos, and 20% of these patients have persistent exophthalmos after successful treatment. Unfortunately, in 1% of patients after treatment the exophthalmos becomes progressive.

The degree of exophthalmos is sometimes different in the two eyes; I have seen a variable regression in the exophthalmos after operation, in which that in one eye regresses almost completely and the other to a very minor extent. In the progressive type of exophthalmos following operation the prognosis is bad, and the very greatest care must be taken of these patients.

The treatment really begins with the care of the eyes at operation. This is most important, and in most cases the precaution of completely covering the protruding eyes, as described by Lahey in "Practice of the Lahey Clinic", is quite adequate.

There is a good deal of experimental evidence, of course, to show that the exophthalmos is thyrotropic in origin, and there is little doubt that the exophthalmos is due to œdema of the orbital contents, especially of the ocular musculature. Therefore it is reasonable after operation to give the patient large doses of thyroid extract in an effort to minimize the amount of thyrotropic hormone secreted by the anterior lobe of the pituitary, and in this way form some break on the exophthalmic protrusions.

I have had some experience with irradiation of the pituitary gland, but I have not been very convinced of its outstanding value. There are very definite indications for orbital decompression, and I think that the presence of progressive exophthalmos with dim, blurred or double vision with chemosis, keratinization of the cornea and ocular palsies is evidence for decompression of the orbit.

Occasionally it may be necessary to perform an orbital decompression before operation, and of course it is important to realize that one can have progressive exophthalmos without hyperthyroidism.

The Skeletal System.

Most patients with thyrotoxicosis complain of undue tiredness and lassitude, and in certain patients gross myasthenia is present.

In most patients with severe or moderately severe thyrotoxicosis there is pronounced muscle wasting, and as was stated before the patient is in a state of negative nitrogen balance and creatinuria is present.

With regard to muscular activity in the thyrotoxic patient, it should be remembered that there is very considerable waste of muscle effort. When one sees a severely thyrotoxic subject sit in the consulting room, one is immediately aware of the multiple movements of the head, neck, hands, legs and body in general which are carried out. This wasteful muscular activity continued for most of the day must result in considerable fatigue, even though the patient is driven in some cases to even maniacal activity. Not only is there muscle wasting but there is bone wasting in thyrotoxicosis. Spontaneous fractures have been described in patients with advanced disease.

The Nervous System.

It is very important when considering the nervous manifestations of this disease to bear in mind the underlying disposition and temperament of the patient. This is of prime importance in determining the type of nervous

reaction the patient will display. I always teach that nervous manifestations are of the least importance in the making of a diagnosis of thyrotoxicosis, and one has to be very careful to differentiate the mild thyrotoxic state from the anxiety state, from constitutional inadequacy, and from a condition of primary pituitary wasting. Occasionally one sees a patient with thyrotoxicosis who is frankly maniacal, and I think this manifestation is somewhat more frequent than the depressed thyrotoxic condition which one sees from time to time. It is very interesting to read some of the teachings of the Benedictine medical school of Monte Cassino in the Middle Ages. Advice is given to be especially careful in the professional approach to certain types of patients, and this applies especially to the severely thyrotoxic patient.

The severely thyrotoxic patient is sometimes very difficult to deal with at the first interview, and occasionally throughout the whole course of the illness. I have found that almost always the thyrotoxic patient is unwilling to go to hospital. Even though she realizes that she is ill, she is unwilling to face the prospect of enforced rest, of curtailment of the activity to which she is continually driven.

On the other hand, many patients with constitutional inadequacy are only too willing to seek refuge in hospital, and I always notice these various responses to the injunction that hospital observation and preparation are imperative. During the period of preparation for operation it is very important that good nursing, medical and psychological care are exhibited.

The Endocrine System.

As one would expect, there are other associated endocrine disturbances in severe cases of thyrotoxicosis. There is a tendency for patients with thyrotoxicosis to have hypomenorrhœa, and their fertility may also be affected; occasionally one sees a patient with thyrotoxicosis who has repeated miscarriages.

The Cardio-Vascular System.

The importance of the effect of thyrotoxicosis on the cardio-vascular system cannot be over-estimated. The prime sign of thyrotoxicosis in regard to the cardio-vascular system is the tachycardia. This is due to a direct effect of the thyroid hormone on the cardiac muscle. But there are other factors which increase the cardiac rate. There is an increased cardiac output which is proportionate to the basal metabolic rate, and the cardiac output may be increased 50% to 100%. Cardiac output is the product of stroke volume and pulse rate, so that one can see how the pulse rate is likely to be increased when the cardiac output is increased in this condition.

In the very vascular thyroid gland there is free communication between the arterial and venous systems, and there is functionally an arterio-venous fistula in the thyroid gland. As in aortic regurgitation the blood leaks, and in this case of course the leak is into the venous system; I am certain that this is an important consideration in a large "thiouracil" goitre. The diastolic pressure tends to be lowered, so that the mean arterial pressure is reduced and the pulse rate rises through the vagal reflex. In the same way that compression of an artery leading to an arterio-venous fistula lowers the pulse rate, so does ligature of the arteries supplying a very vascular goitre. Any arterio-venous fistula of sufficient magnitude will have an ill effect on the cardiac mechanism, and of course this is especially deleterious in thyrotoxicosis.

I have seen patients suffering from overdosage of thiouracil, and presenting with a huge, throbbing, vascular goitre, whose pulse rate has been quite rapid even though the patient appeared to be subthyroid. I think one element in such cases is the arterio-venous shunt in the vascular gland.

The circulation time in thyrotoxicosis is reduced as well. The usual finding with regard to the blood pressure is that there is an increase in the systolic blood pressure and the diastolic pressure is lowered, giving the characteristic high blood pressure of the established thyrotoxic state.

The causes of raised blood pressure are, firstly, increased cardiac output as described above, and then the increased appetite, which leads to an increased digestive activity, and this tends to cause a rise in blood pressure as well. Then the thyrotoxic patient is subject to undue emotional fluctuation, from unusual excitement, fear, *et cetera*, so that an increased suprarenal effect is brought into play, and this also tends to raise the general systolic blood pressure.

There is also the effect of exercise, which in the thyrotoxic subject is constant. The activity may or may not be purposeful activity. There are also the wasteful muscle movements and continual tremor as previously mentioned. In addition the thyrotoxic patient is unable to relax, and has less recumbency and less secure periods of sleep, so that all these factors tend to raise the systolic blood pressure. The lowered diastolic pressure is due to a lowered peripheral resistance, and in the young subject with elastic arterioles there is considerable peripheral dilatation of the capillary network and the arterioles, so that one can see pulsation in the capillaries in many of these patients. There is in addition vascular dilatation associated with the increased food intake in some patients, as well as the arterio-venous fistula effect described above.

All these factors lower the diastolic blood pressure and in association with a raised systolic pressure result in a considerable increase in the pulse pressure range. It is interesting to speculate on the effect on the coronary circulation; but if there is an increased cardiac output, if the mean aortic blood pressure is raised, if there is an associated adrenaline effect, and provided the pulse rate is less than 160 per minute, then the coronary blood flow should increase.

The probable causes of cardiac failure in the thyrotoxic patient are the specific toxic effect on the myocardium together with the increased work factor and, in the older age group, the associated coronary disease which may be present.

Some Clinical Problems in Relationship to Thyrotoxicosis.

I should like now to mention some of the clinical problems which I meet in my consulting work. Let us discuss some points about the case of doubtful diagnosis—firstly, the so-called therapeutic trial with thiouracil. I think that this method of therapeutic trial has some value, but it has very considerable difficulties. The doctor who begins to treat a patient with thiouracil should be prepared to be fully and finally responsible for the treatment of the patient in regard to the thyrotoxicosis. It is one of the most difficult consulting problems in relation to this disease to see a patient who has been given thiouracil for some time. The physician has lost his way, as it were, and then referred the patient for opinion as to further treatment and even as to the original diagnosis. Anxiety or nervous symptoms may be present, and mild thyrotoxicosis, which was present originally, is now obscured. Of course the patient may never have had thyrotoxicosis, and it is in these cases that the largest goitre develops.

The problem at this stage is difficult. If I am uncertain of the position, I generally advise that thiouracil treatment should cease and then that a critical review of the patient should be made for some weeks or months.

It is my idea that most young people with mild thyrotoxicosis which cannot be diagnosed clinically by the discerning physician are best reassured, treated medically as to the general way of life, and observed and protected at some distance.

It is very easy for iatrogenic disease to arise especially in relationship to goitre. People feel better when slightly hyperthyroid than when hypothyroid.

If you have such a patient, advise her not to go from doctor to doctor, but to have one good consultation with a sound physician; then you should manage the patient and

her condition, so that by careful observation and appreciation you know the course of the disease process if it is present.

In that way you will eventually be certain whether the patient has mild thyrotoxicosis or not. Above all I would say that you should be guided more by your clinical judgement than by any laboratory. This applies especially to the basal metabolic rate estimation, which is not an easy way to make a diagnosis in these cases.

The next problem which is occasionally met is the thyrotoxic patient with gross nervous symptoms. The patient may have acute mania, may present with an acute confusional state, or may present with the apathetic type of thyrotoxicosis associated with myasthenia.

I think it is valuable to look upon the mental breakdown as a toxic psychosis in a predisposed person. Overall I think the results of treatment in this group are not good, and one should be guarded in prognosis.

Toxic Retrosternal Goitre.

Toxic retrosternal goitre is very rare. Occasionally I am confronted with a patient referred by a doctor because he thinks that the patient may have a toxic retrosternal goitre. The patient usually has nervous symptoms and complains of undue lassitude and perhaps loss of weight, and the doctor is worried in case he is missing a so-called hidden goitre.

Usually in these cases there is a small thyroid gland in the neck, and to suspect a retrosternal goitre really shows a lack of understanding of the usual pathology and mechanics of the development of a retrosternal goitre. I would advise that, for practical purposes, one should not very seriously consider the question of a toxic retrosternal goitre.

Masked Hyperthyroidism.

The most comprehensive reviews stress the fact, to which I hold strongly, that most patients with masked hyperthyroidism fall into the older age group. They present three outstanding groups of features: (i) apathy and muscular weakness; (ii) loss of weight; (iii) cardiovascular symptoms such as congestive cardiac failure, auricular fibrillation, *angina pectoris*, tachycardia and palpitations. Some cases are associated with the *diabetes mellitus* of later life.

I generally advise thyroidectomy in this condition, especially for patients in the older age group.

Apathetic Thyrotoxicosis.

Occasionally one sees thyrotoxicosis associated with a depressed state. The thyrotoxicosis seems to be coincidental to a markedly depressed emotional state. Thyrotoxicosis in these cases may simulate *myasthenia gravis* or even progressive muscular atrophy. Both *myasthenia gravis* and thyrotoxicosis are associated with defective creatine metabolism, and all these patients excrete an abnormal amount of creatine in the urine. The abnormal creatinuria is abolished in thyrotoxicosis by adequate thyroidectomy. This, of course, does not hold in myasthenia.

Myasthenia is a symptom, not a disease, and is an indication merely of a facilitation of the cholinesterase process at the neuro-myal junction. Myasthenia occurs in the condition known as *myasthenis gravis*, in some cases of thymic tumour, in thyrotoxicosis and of course in curare poisoning.

It is well to remember that fairly acute bulbar palsies occur in thyrotoxicosis.

Thyrotoxicosis in the Obese.

The association of thyrotoxicosis with obesity is rare, but it is occasionally seen, and is not to be regarded as an impossible combination.

Recurrent Thyrotoxicosis.

If there is a considerable thyroid tumour in the neck in the condition of recurrent thyrotoxicosis, I generally advise its surgical removal. If I consider that the patient is suffering from recurrent thyrotoxicosis and has no palpable thyroid tissue in the neck, I generally advise treatment with methyl thiouracil.

There is one form of recurrence which is very obvious to patients and relatives, and that is the recurrence of thyrotoxicosis due to hyperplasia of the thyroid tissue in the pyramidal lobe of the thyroid which has not been removed during the primary thyroidectomy.

These people have a very obvious high rounded mass caused by a considerable development of the thyroid tissue of the pyramidal lobe.

Excision should be adequate, but usually it is necessary to make a second higher incision.

Hyperthyroidism Complicating Pregnancy.

Clinically obvious thyroid enlargement occurs in 50% of pregnant women. The basal metabolic rate rises about 25% in the later half of pregnancy. In most cases mild thyrotoxicosis is aggravated by pregnancy; but these people can usually be well treated by small doses of methyl thiouracil and the pregnancy successfully concluded. It is important, of course, not to give such a patient excessive doses of antithyroid drugs. After the infant has been weaned, surgical treatment is usually indicated. A few patients develop severe thyrotoxicosis during pregnancy, and their condition is to be regarded very seriously.

Probably the over-all advice is to treat the goitre and neglect the pregnancy, and of course successful thyroidectomy can be performed during pregnancy. In the treatment of patients showing evidence of severe thyrotoxicosis it is probably best to operate. It is probable that most patients with thyrotoxicosis associated with pregnancy can be treated by medical measures at the present time. The obstetrician should be particularly aware of the older class of women with an old nodular goitre who has toxic signs and symptoms and cardiac manifestations. These patients generally give rise to a great deal of anxiety.

Summary.

Some aspects of the clinical physiology and pathology of thyrotoxicosis are discussed. A number of clinical problems encountered in consultation are mentioned and discussed briefly.

VOLVULUS OF THE CAECUM.

By JOHN C. FITZHERBERT, F.R.C.S. (England),
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VOLVULUS of the caecum is usually regarded as an acute abdominal emergency. Aird indicates that in 25% of cases the caecum becomes gangrenous before operation is performed. Donhauser and Atwell have reviewed 100 cases reported in the literature, and report six new cases in two of which the caecum was gangrenous. These authors draw attention to the fact that in many cases a volvulus of the caecum of intermittent nature has usually for years been simulating chronic or recurrent appendicitis, though in 25% of the cases they report the caecum was gangrenous.

The association, in the clinician's mind, of gangrene with volvulus of the caecum, is probably due to the intermittent reports of isolated cases in the literature in which gangrene of the caecum has followed the development of a volvulus.

Some recent experiences have drawn further attention to the clinical syndromes accompanying volvulus of the caecum and the ascending colon. An attempt will be made to show that on the one hand this pathological condition may produce a syndrome which can be distinguished only with difficulty from the syndrome accompanying acute appendicitis, whilst on the other hand patients suffering from intermittent and partial volvulus of the caecum may be submitted to innumerable investigations for recurrent

abdominal pain; the investigations give no diagnosis and treatment no relief.

Gangrene has not occurred in this reported series of 17 cases, and I would submit that the high incidence of gangrene of the caecum associated with this disorder is due to the fact that it is only when strangulation of the gut has threatened or occurred that many of these patients are submitted to operation and the diagnosis of volvulus is made.

In this series two groups are evident; the patients of the first group were seen as presenting acute abdominal emergencies in which a provisional diagnosis of acute appendicitis had been made by the casualty surgeon. These patients were all submitted to a formal laparotomy. The second group consists of patients who for months or years had been experiencing attacks of abdominal pain, in the investigation of which no abnormality was revealed, and for which no treatment, operation or otherwise, was of avail.

These experiences leave one with the impression that volvulus of the caecum and ascending colon is a relatively common cause of lower abdominal pain. Certain features of the clinical syndrome are reasonably constant for each group; but it is emphasized that particularly in the second group the presenting and accompanying symptoms may be varied and confusing.

The Series.

Group I.

This small series comprises nine cases, collected over a period of six months; six of the patients were female and three were male. The average age of the former was twenty-six years and of the latter fifty-one years; the age of a boy, aged twelve years, who had a partial volvulus of the caecum in the presence of a reversed rotation of the fore and hind gut was excluded from the average.

In each case the presenting symptom was lower abdominal pain; in seven cases there was a history of previous attacks of pain. The onset of the pain was most frequently sudden, and the pain was described by the patient as being colicky or cramping in nature. The duration of pain preceding operation varied from twelve hours, the shortest time, to the longest time of seven days. The pain in the first instance was centred about the umbilicus, but as the attack progressed the pain was described as moving to the right iliac fossa. Vomiting followed the onset of the pain in five cases; in two cases the patient complained of nausea without vomiting.

The clinical signs were significant. The temperature was elevated beyond 99·4° F. in seven cases and the pulse rate beyond 90 per minute in seven cases at the time of the initial examination. The highest initial temperature and pulse rate were 100·8° F. and 120 per minute respectively. Tenderness, of varying degree, but usually exquisite, was elicited by palpation in the right iliac fossa. In six cases muscle guarding accompanied the tenderness.

Rectal examination, with the patient lying in the left lateral position, revealed tenderness to digital pressure in the right or left pararectal fossa; it was noted in four cases that the tenderness was maximal in the left pararectal fossa and not in the right pararectal fossa as one would have expected. In three cases rectal examination revealed a mass lying anterior to the examining finger, which was irregular in shape, doughy and tender. Operation in these cases showed that the mass consisted of inspissated fæces in the caecum.

The operation findings were identical, in principle, in each case, though in certain cases there was some variation in detail. The caecum and the proximal portion of the ascending colon were completely enclosed in peritoneum. The hepatic flexure was in what could be regarded as a low anatomical position. The distal third of the ascending colon and the hepatic flexure had the normal peritoneal coat and a normal attachment to the posterior abdominal wall. The caecum and the ascending colon in the proximal two-thirds were thus left swinging in a pendulum fashion from the more distal segment of the gut. Accordingly it was possible for the caecum to rotate in a clockwise direction, the caecum coming to lie in some cases in the left pararectal fossa. In three cases an abnormal peritoneal attachment of the terminal two inches of the ileum was seen, as a result of which this segment of the gut was bound down to the posterior abdominal wall above the line of the pelvic brim. This abnormal fixation of the terminal portion of the ileum, which has been noticed by McGowan and Dixon and emphasized by Corner and Sargent, limited the distance to which the mobile caecum could travel, but the ease with which it could rotate was increased. However, this abnormal peritoneal band was not seen so frequently as to substantiate the opinion of Corner and Sargent that it is the commonest cause of caecal volvulus in patients with a mobile unattached caecum.

The appendix was extraperitoneal and retrocaecal in five cases; in no instance was it inflamed or kinked or did it contain fæcoliths.

The segment of caecum and ascending colon surrounded by peritoneum was heavily striated with subperitoneal blood vessels coursing upwards and laterally; the presence of these vessels was, in all probability, a result of an intermittent obstruction to the venous drainage from the ascending colon and caecum following partial rotation of this segment of the gut.

In each case examination of the mesentery at the apex of the volvulus showed that small subperitoneal hæmorrhages had occurred in this region over an extensive area.

Group II.

Eight cases in this group have been met over a period of six months. In this group, while the signs and symptoms may be bizarre, there are a number of features which make the diagnosis of partial intermittent volvulus of the caecum reasonably certain.

The onset of pain following exercise or strenuous work was noted in five cases. There was in each case a history of previous attacks. In females the patient may have experienced the first attack of pain during a pregnancy or early in the puerperum. The pain in each instance rapidly increased in severity, and frequently became very severe; the attack of pain persisted for four to six hours, and then usually suddenly disappeared. The disappearance of the pain was accompanied by a lot of wind rumbling in the abdomen, unassociated with further pain, and shortly afterwards a considerable amount of flatus was passed.

Before the attack of pain develops the patient may experience a desire to micturate frequently, owing possibly to ballooning out of the caecum in the true pelvis. This was the initial symptom in three cases, and in each of these cases an extensive investigation of the genito-urinary tract revealed no abnormality. The pain, which is situated across the lower part of the abdomen or about the umbilicus, frequently, as the attack progresses, passes round to the region of the right loin. In between the episodes of acute pain the loaded caecum may lie in the pouch of Douglas, and women complain of a bearing-down sensation in the rectum, dyspareunia, and a continual ache in the lower part of the abdomen. This latter symptom complex has obvious implications, and those patients who were subjected to multiple gynæcological surgical procedures obtained no relief. As in those cases in which appendicectomy was performed for this condition, the pain which persisted after operation was comfortingly described as being due to adhesions.

The clinical findings are less definite than in the cases of Group I, as the patients are usually examined in a pain-free period; but again the rectal examination may reveal fæces in the caecum, which is a diagnostic sign.

Discussion.

The frequency of partial volvulus of the caecum is a matter of conjecture; but Wolfer *et alii* conclude, after an anatomical survey of 125 cadavers, that non-fixation of

the caecum and the ascending colon occurs in 25% of people. Thus the anatomical disposition which allows partial volvulus of the caecum to occur is very common.

McGowan and Dixon surmise that as case reports cover only one or two cases, volvulus of the caecum has been justly described as a rather rare condition.

Also, R. H. Sweet suggests that in view of the fact that only six cases of volvulus of the caecum appear in the records of the Massachusetts General Hospital, it must be a relatively rare condition. But all of these cases were of the acute type and associated with total obstruction of the bowel. He does refer to the existence of a type of subacute or chronic partial obstruction of the caecum.

Porritt suggests that volvulus of the caecum and ascending colon is more prevalent than has been realized, and whilst he again emphasizes the clinical picture associated with complete torsion, he mentions the need to distinguish between partial volvulus and acute or subacute appendicitis.

Gardiner, however, reporting a series of cases of complete volvulus which he had collected—fifteen cases in the last five years—is of the opinion that volvulus of the caecum and the ascending colon is far more common than has been supposed. Many of his patients gave histories of frequent attacks of pain in the right iliac fossa with tenderness and varying degrees of distension. Gardiner interprets these symptoms as being episodes of partial torsion.

Again, Donhauser and Atwell also state that partial torsion of the caecum is more frequent than the reported incidence would suggest.

My experience is that this condition of partial intermittent volvulus of the caecum and ascending colon occurs frequently and should be considered in the differential diagnosis in all cases of lower abdominal pain.

The following three pathological types are recognized: (i) The axis of rotation is about the long axis. This is the commonest type. The rotation is clockwise. (ii) The axis of rotation is transverse. This type is asociated with adhesions between the terminal portion of the ileum and the posterior abdominal wall, usually in the region of the brim of the pelvis. (iii) The axis of rotation is oblique, the caecum coming to occupy the umbilical or splenic position.

In this series only the first two types have been met. There does not appear to be any great variation in the clinical picture produced in each pathological type. However, the clinical syndrome does appear to vary according to whether the volvulus is acute and irreversible, acute and reversible, or intermittent and partial. The acute and irreversible volvulus will terminate rapidly in gangrene or near gangrene of the caecum, and as a pre-operative diagnosis of an acute intestinal obstruction is usually made, immediate operation is usually obviously indicated.

The type in which the volvulus is acute but reversible and probably only partial is possibly the most common variety, and is the type which is today almost invariably diagnosed as acute appendicitis. It corresponds to the subacute type in the classification of Gardiner and of Corner and Sargent. The clinical features were all analysed in Group I of this series. To reiterate, they were as follows: pain about the umbilicus or in the right iliac fossa, vomiting on one or two occasions after the onset of the pain, nausea, rapid pulse rate, raised temperature, and exquisite tenderness to palpation, in the right iliac fossa and on rectal examination. With this symptom complex it is not unreasonable for the clinician to make a diagnosis of acute appendicitis. But it is apparent that a volvulus of the caecum and the ascending colon, which is acute and reversible, is capable of producing a set of clinical signs and symptoms which closely resemble those produced by inflammatory changes in the appendix. Cope does not include it in a long list of differential diagnoses to be considered in cases of acute appendicitis. A wider recognition of this condition is required.

The necessity of attempting to distinguish, prior to operation, between acute appendicitis and volvulus of this particular segment of gut is self-evident, since unless appendicectomy, in patients with an intermittent volvulus of the caecum which has been confused with acute appendicitis, is followed by the formation of adhesions, which may bind the caecum to the region of the right iliac fossa, the patient may be unrelieved of symptoms. Again, with the development of the cult of removing an appendix through a half-inch incision, it becomes more difficult to establish a diagnosis at operation. The easy delivery of a mobile caecum and the removal of a normal appendix through one of these "microscopic" incisions is most frequently followed by a sigh of relief from the surgeon, rather than by a decision to enlarge the incision in order to complete a more careful exploration of the abdomen.

The distinction between the two pathological conditions, as suggested, may be difficult. The following clinical features are usually associated with a volvulus of the caecum which is acute and reversible: (i) The onset of pain occurs after exercise or hard work. (ii) There is usually a history of previous attacks of pain. (iii) There may be a history of local distension of the abdomen in the region of the right iliac fossa. (iv The tongue is not coated, nor is the breath offensive. (v) Tenderness on rectal examination may be most pronounced in the left pararectal fossa, and may be associated with the sensation of a tender boggy mass anterior to the examining finger. (vi) At operation, suspicion of the existence of a partial volvulus of the caecum should be roused if, in the presence of a clinical syndrome one usually associates with acute appendicitis, a normal appendix and a very mobile caecum are found. The presence of large numbers of subperitoneal vessels and petechial hæmorrhages in the adjacent mesentery can be conclusive evidence.

I attach great importance to the findings of the rectal examination, which must be made deliberately, for in several cases in which I imagined I felt fæces in the rectum I was to find out on more careful examination that in fact I was palpating inspissated fæces through the wall of the rectum, and contained within the caecum, as was subsequently proved at operation.

When the volvulus becomes partial and intermittent, considerable difficulty may be experienced in establishing a diagnosis, and the patient may be subjected to a plethora of investigations, which reveal no abnormality, and multiple operations. Patients in this group have all had their appendix removed, and this operation has not terminated the attacks of recurrent lower abdominal pain.

Reports of Cases.

The case notes of several selected cases may emphasize several points.

CASE I.—A, aged forty-four years, had undergone appendicectomy in 1939. He was rushed into hospital for this operation, and he was told that "the appendix was not as bad as it was thought it might be". In February, 1953, he started to complain of intermittent attacks of lower abdominal pain, which were the same, as accurately as he could remember, as the pains he had had before his appendix was removed. These attacks of pain were precipitated by physical exercise, and were severe enough to make him stop work for six months. The pain spread into the right loin. The pains in the abdomen were accompanied by pains in the head, and he had been referred to a psychiatrist for an opinion, as barium meal and barium enema X-ray examinations and an excretion pyelogram revealed no abnormality. When he was examined by me, his clinical signs and symptoms were consistent with the diagnosis of partial volvulus of the caecum, and the diagnosis was confirmed at operation. The operation findings included the revelation of two long, attenuated fibrous bands, which stretched between the peritoneal surface of the old scar and the caecum lying in the right pararectal fossa. It seems reasonable to suggest that these adhesions prevented an early recurrence of pain after the appendicectomy.

CASE II.—B, aged thirty-two years, had undergone appendicectomy in 1939, during her first pregnancy, and right and left salpingectomy and right oophorectomy in 1944; but the attacks of recurrent abdominal pain have persisted. The symptoms are typical of the pain which accompanies a

caecal volvulus, and rectal examination reveals a tender, loaded caecum in the right pararectal fossa. The patient is naturally rather sceptical of the possibility of obtaining relief from the pain by any further operative procedure.

Case III.—Mrs. C, aged twenty-one years, complained of attacks of severe lower abdominal pain for which she had already undergone two operations, the first an appendicectomy and the second, six months later, a laparotomy, at which nothing was found to explain the attacks of pain of which she was complaining. The character of the attacks of pain and the clinical findings were consistent with the diagnosis of caecal volvulus, and at operation the caecum was found lying in the left pararectal fossa. Caecopexy was performed, which gave her relief from the pain and from dyspareunia and menorrhagia, both of which were becoming increasingly severe. One month after operation she had gained 10 pounds in weight.

Comment.

The pain which accompanies the partial and intermittent volvulus is persistent during the time that the twist is present. It may be described as being dull or sharp, but it is almost invariably associated with some distension of the lower part of the abdomen, which may be asymmetrical. As the attack of pain develops and it increases in severity, the patient may experience severe pain in the right loin. The pain disappears quite suddenly, and as it disappears there is a rumbling of wind and a large amount of flatus is passed.

A rectal examination can be diagnostic, as frequently a mass of inspissated fæces is palpable, which can be confused with an ovarian cyst in a tender caecum.

Corner and Sargent, fifty years ago, held that they should relieve the appendix of "a little of its evil reputation", and emphasized that caecal volvulus could be a common condition, occurring as a rare and fatal form with gangrene of the caecum. It has been my experience that it is still a common condition, and one which surgeons and gynæcologists cannot ignore as a cause of recurrent lower abdominal pain.

Summary.

1. A series of 17 cases of volvulus of the caecum is presented.

2. It is suggested that a volvulus of the caecum may be acute and irreversible, acute and reversible, or partial and intermittent.

3. The signs and symptoms accompanying each clinical type are different.

4. It is submitted that a volvulus of the caecum, other than the acute and irreversible type, may be a more frequent cause of lower abdominal pain than has been realized.

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Reports of Cases.

THE ACUTELY INFLAMED APPENDIX IN A HERNIAL SAC.

By Thomas F. Rose.

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In this article are reported four cases of an acutely inflamed appendix in a hernial sac, two in a right indirect inguinal hernia, one in a right femoral hernia and one in a right obturator hernia. In addition, a case is reported of a scrotal abscess in a right inguinal hernia due to a fæcolith left from a previously ruptured pelvic appendix.

Acute Appendicitis in a Right Inguinal Hernia.

Case I.—The patient was a male, aged forty-three years, who had had a large right inguinal heria for twenty years. It was an easily reducible scrotal hernia which had always contained bowel. He was actually awaiting operation when he was admitted to hospital urgently, because four hours previously he had commenced to have an attack of generalized abdominal pain which quickly radiated to the right groin. One hour later the hernia became painful, irreducible and even larger than before. This pain was accentuated by an attack of vomiting.

Examination disclosed that the patient had a temperature of 99·8° F., with normal pulse and respiration rates. His tongue was furred and dry. The abdomen was normal. The right inguinal hernial sac was much larger than when he was examined fourteen days previously at the out-patient department, and now felt like a bag of fluid—a hydrocele—whereas previously one could distinguish coils of bowel. The sac was not tender, nor was transillumination through it possible. Above it there was a tender swelling in the medial half of the right groin completely hiding the external inguinal ring. This mass was irreducible and there was no impulse on coughing.

The diagnosis was thought to be that of a strangulated right inguinal hernia with the scrotum full of transudate.

At operation, a complete indirect inguinal hernia was found. The groin mass was a ruptured gangrenous appendix, whose distal three-fourths had been obstructed by a fæcolith. The normal caecum and base of the appendix blocked the neck of the sac, so that the inflammatory process was effectively sealed off from the general peritoneal cavity. The sac itself was full of pus.

The appendix was removed and the sac excised. Repair was not performed because of the risk of infection. Healing, aided by antibiotics, was by first intention, and when the patient was examined two years later, the hernia had not yet recurred.

Case II.—A youth, aged eighteen years, had never noticed anything wrong until eight hours prior to his admission to hospital, when he was seized with recurrent attacks of generalized abdominal pain and vomiting. This was followed within an hour by a painful swelling in the right groin.

Examination of the patient disclosed that his temperature was normal, as were his pulse and respiration rates. His tongue was furred. Abdominal examination revealed no abnormality save for a hard, tender, round mass at the right external ring. This was irreducible, and there was no impulse on coughing.

The diagnosis was that of a strangulated right inguinal hernia.

At operation a right incomplete inguinal hernia was found. It contained an appendix whose distal half was acutely inflamed and partially gangrenous, owing to a fæcolith obstruction. The base of the appendix sealed off the hernia from the general peritoneal cavity. The caecum was in the normal position. Appendicectomy was performed

and the hernial sac removed. No attempt at repair was made. Convalescence was uneventful, the wound healing by first intention.

Scrotal Hernial Abscess due to a Missed Fæcolith.

This case is interpolated because, though the inflamed appendix was never in the hernial sac, an extruded fæcolith later in some way found its way into this patient's right inguinal hernial sac and caused an abscess there.

CASE III.—The patient was a male, aged thirty-five years, with a known complete right inguinal hernia. Three years previously he had had an acutely inflamed perforated pelvic appendix which formed a pelvic abscess. At another hospital the appendix was removed and the abscess drained. At that time, as far as the patient could remember, the hernial sac was not implicated.

He had remained well until five days prior to his admission to hospital, when he noticed that his hernia, previously always painless and reducible, now became painful and irreducible. These symptoms became worse and were associated with rigors, but he never suffered abdominal pain.

Examination of the patient disclosed him to be a sick man whose temperature was 100° F., whose pulse rate was 110 per minute, and whose respirations numbered 15 per minute. Abdominal examination revealed no abnormality. There was a large, hot, tender cystic swelling in the right side of the scrotum stretching up to the inguinal canal. The scrotal skin was œdematous and thickened except anteriorly where the abscess was pointing. The right testis was not palpable.

The abscess was incised, and much pus (from which *Bacterium coli* was later grown on culture) escaped and with it a large fæcolith. Investigation showed that the pus was in a complete inguinal hernial sac sealed off in the inguinal canal from the general peritoneal cavity by the inflammation.

The inflammatory process rapidly subsided, and two years later the hernia had not yet recurred, so that operation for removal of the sac was accordingly deferred.

Acute Appendicitis in a Right Femoral Hernia.

CASE IV.—A male patient, aged fifty years, had had generalized abdominal pain for the twenty-four hours prior to his admission to hospital. Twelve hours after its onset, sudden pain and swelling appeared in the right femoral triangle.

Examination of the patient then disclosed that the abdomen was normal. There was a tender, hard, irreducible swelling in the right femoral triangle, which clinically resembled a strangulated femoral hernia.

At operation there was found a femoral hernia, in which was an appendix four inches long. Its distal half, blocked by a fæcolith, was acutely inflamed and full of pus. It had not yet ruptured. The caecum blocked the neck of the sac, which was adherent to the appendix by inflammatory adhesions. The appendix was able to be removed from below. The sac was then removed by the method of Lotheissen. No repair was performed. Convalescence was uneventful.

Acute Appendicitis in a Right Obturator Hernia.

Case V was the case of a woman, aged sixty-six years, in whom an acutely inflamed appendix ruptured in a right obturator hernia. This case has already been reported fully in this journal (Case II, Rose, 1954).

Discussion.

The subject of the acutely inflamed appendix in a hernial sac is not only of clinical but also of historical interest, in that the first successful appendicectomy was performed by Claudius Amyand at Saint George's Hospital, London, in 1735, when he removed an appendix from a right inguinal hernia in a boy (Creese, 1953; Rogers, 1953). A similar case was brought to a successful conclusion by Hall in 1886.

Incidence.

Whilst pus occurs but rarely in a hernial sac from general peritonitis of appendiceal origin (Mehta, 1952), the presence of an appendix in a hernial sac is even less common, though Iovetz-Tereshchenko (1953) has removed eight appendices from hernial sacs (five in a right inguinal hernia, three in a right femoral hernia), only one of which was inflamed.

Several individual cases of an inflamed appendix in a right inguinal or femoral hernial sac were reported in the correspondence columns of the *British Medical Journal* in 1953 (Burkitt, 1953; Holliday and White, 1953; Maurice, 1953; Walker, 1953; Winckworth, 1953). Juvara and Borcescu (1948) have described a mucocele of the appendix in an inguinal hernial sac.

In a series of my own of 161 right indirect inguinal hernias, only one was found to contain a normal appendix, and only two contained an inflamed perforated appendix (Cases I and II). No appendix was found in any direct inguinal hernia.

Of 30 right femoral hernias, in only one was an appendix found, and that was acutely inflamed (Case IV).

In three right obturator hernias one appendix was found, and that again was acutely inflamed and perforated (Case V).

No case of strangulation of an appendix was found in this series.

These four appendices were abnormally situated because of a mobile caecum. In each instance, the appendix was of usual length. They occurred in a series of 1050 appendicectomies.

Diagnosis.

The diagnosis of this condition is difficult, mostly because it is not borne in mind. In the present series each case was diagnosed as a strangulated hernia mostly from the local signs. However, on review of each case, the symptoms pointed to the correct diagnosis. Abdominal colic, appendiceal in origin, preceded the painful, tender groin swelling, whereas in a strangulation the groin symptoms and signs come first, to be followed later by the abdominal colic of intestinal obstruction.

Case III once again illustrates the importance of looking for and removing an escaped fæcolith at the time of removal of the perforated appendix, as otherwise a residual abscess is bound to occur sooner or later (Rose, 1945).

Treatment.

The treatment of the inflamed appendix in a hernial sac is to remove the appendix and the sac. In the foregoing cases, wound healing, aided by antibiotics, was by first intention.

Summary.

Four cases of an inflamed appendix in a hernial sac (two inguinal, one femoral and one obturator) are described.

In addition, a case of recurrent appendiceal abscess in a right scrotal hernia due to a missed fæcolith is described.

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REPORT OF TWO CASES OF CHROMOBLASTOMYCOSIS IN NEW SOUTH WALES.

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Sydney.

CHROMOBLASTOMYCOSIS was first reported in Australia by Saxton, Hatcher and Derrick in 1946. All their cases came from Queensland. Barrack in 1951 reported that since 1927 he had encountered at least 40 cases in Queensland, of which 12 had been confirmed histologically. He concluded that chromoblastomycosis was a comparatively common disease in both tropical and subtropical regions. This disease is of sufficient rarity in New South Wales to warrant the report of two confirmed cases.

Case I (A.H.McG.).

X., aged fifty-seven years, a timber worker, presented complaining of a warty eruption of his left arm. About fifteen years before a growth had appeared on the dorsum of the left hand. This spread outwards, tending to heal in parts of earlier growth. Over the past fifteen years there had been intermittent periods of activity and quiescence, the former being heralded by considerable local irritability. An average period of active spread varied from one to three months, and periods of quiescence up to six months. He was adamant that growth was more rapid in the winter. In its most active phase, the lesion spread up to one-quarter of an inch in six weeks. The patient had lived near Moree all his life, although for a short period he had worked within some seventy miles of the Queensland border. He had been a timber worker for the past twenty-five years, working principally with cypress pine and also with eucalypts. He had been a bullock driver for ten years prior to the onset of the malady, being engaged in transporting timber to the local mill. He had also been in close contact with horses, dogs and rabbits.

There was no history of previous illnesses, apart from prostatic hypertrophy. His wife and six children were all in good health. There was no history of miscarriages or stillbirths on the part of his wife.

On physical examination of the patient, the individual lesions present were verrucous. They varied in colour from that of normal skin to dirty brown. In some lesions there was a violaceous tinge. In general they showed a "relief map" configuration, extending from the back of the hand to the elbow. The lesions were confined to the extensor surface of the left arm and showed varying degrees of activity. It seemed that the areas previously affected by the disease now showed depigmentation and slight atrophy. The distribution of the lesions bore no relation to nerve supply. The regional glands were not enlarged. The hair growth appeared to be unaffected in density or colour. There was no evidence of local anæsthesia, muscle wasting or nerve involvement. A detailed general medical examination revealed nothing of importance. There was moderate enlargement of the prostate gland. The liver and spleen were not palpable.

A number of investigations were carried out. The result of a full blood count was within normal limits. There was no eosinophilia. X-ray examination of the chest revealed no evidence of sarcoid or tuberculosis. In both hands arthritic changes were found; otherwise no abnormality was detected. No reaction was obtained to the Mantoux test, carried out with dilutions to 1:1000 old tuberculin. Examination of a smear from the mucous membrane of the nose stained by the Ziehl-Neelsen method revealed no evidence of acid-fast bacilli. The Wassermann, Kline and Eagle blood tests all produced negative results.

A biopsy specimen was taken from a lesion on the back of the arm and examined by Dr. Steel Douglas, with the following result. He stated that the specimen he had received consisted of a block of skin. On microscopic

FIGURE I.

examination of sections there was to be seen granulomatous tissue with tubercle formation in the papillary and subpapillary layers. In association with the tubercles were multinucleated giant cells, also considerable numbers of polymorphonuclear cells. The overlying epithelium showed pronounced pseudo-epitheliomatous hyperplasia. The histological features were typical of chromoblastomycosis. Furthermore, in the centre of some of the tubercles were found some clusters of characteristic brown septate bodies. No further organisms were seen in sections stained by the Ziehl-Neelsen and Gram techniques.

Chromoblastomycosis is a disease of multiple causation. A similar clinical pattern may result on infection with one of several related species of dark brown or black fungi, which show quite pronounced cultural variations, although the positive phase of the pathogen is uniform in each case. The taxonomy of these fungi is still rather confused; the following statement has been made by Carrion and Silva: "The term chromoblastomycosis, first introduced by Terre *et al.* in 1922, is not only a long word, but a misnomer, falsely ascribing the disease to a blastomycosis, and conveying the erroneous impression of an extraordinary colour element in the clinical picture. Nothwithstanding this, we believe that for the present this name should be preserved. It has been extensively used in the literature." The classification followed is that used in the "Manual of Clinical Mycology" (published by Saunders in 1947).

The diagnosis was made on the finding of spherical bodies in the giant cells of the biopsy tissue and also of *Hormodendrum compactum*, on the cultural characteristics and on the microscopic appearance of the spores.

Case II (W.K.M.).

The second patient, Y., aged twenty-six years, first presented in April, 1953, having noticed a lump on the right wrist area present for a period of six to nine months. It began as a "pimple" and developed a small white "head", which broke. It had enlarged to its present size. There were no subjective symptoms of note, nor a preceding history of trauma. The patient had travelled in the country for two or three weeks at a time. He had not handled cattle. Recently he had been an engineer's assistant, prior to which he was an engineering draughtsman.

On physical examination, the patient was a tall, healthy-looking young man of dark complexion. On the flexor aspect of the ulnar side of the right wrist was a crescentic, reddish-purple, pulpy, infiltrated lesion of small size (some 2·0 centimetres at the most in its longest dimension). There was no sign of "apple jelly" nodules on diascopic examination, but there was a superficial atrophic area in the concavity of the crescent.

A provisional diagnosis of chronic infective granuloma was made. In view of the size of the lesion, total excision was recommended. This was performed by Dr. E. H. Goulston.

A pathological examination was carried out by Dr. Colin S. Graham, who reported as follows. The specimen was a roughly oval piece of skin two centimetres long. Over part of its surface it was smoother and paler than the rest, but no definite papule could be seen in the fixed state. On microscopic examination, chronic inflammation was present in the upper corium; the epidermis over this was slightly thickened. The inflammatory cells were mostly macrophages and lymphocytes with a few giant cells of the foreign body type. Except in the few microabscesses, polymorphonuclear leucocytes were rare. Chromoblastomycetes could be seen in this inflammatory zone, sometimes in the body of a giant cell or in the microabscesses, but not necessarily only in these places. The organisms were not plentiful. They were round and brown in colour, and occurred singly or in groups of three or four. In size they were slightly larger than lymphocytes.

Treatment.

In the first case, the maximum tolerated dose of potassium iodide (60 grammes per day) was given orally. A local application of chrysarobin (4%) and salicylic acid (4%) in a water-soluble base was used once a day. Some two months after treatment had been initiated there was only one solitary lesion remaining on the dorsum of the hand, about 1·5 centimetres in diameter. This was treated by X rays, the dosage being 600*r*, H.V.L. 1·5 millimetres of aluminium to a field slightly larger than the lesion. The patient was examined two months later. He explained that he had been unable to take the potassium iodide mixture. The condition had relapsed, there being some five or six active islets of the disease along the arm. He was persuaded to persevere with what appeared to be a useful if unpleasant treatment. One solitary lesion was treated by X rays (1600*r*, H.V.L. 1·5 millimetres of aluminium) to observe the effect. In the lesion previously irradiated no result whatsoever was observed.

The second patient was treated by surgical excision.

Comment.

It is interesting that in the second case the patient has been in the country for only two short periods at a time. Clive Robinson has also encountered a proven case in Sydney. It seems that more cases will be encountered in the future, and that the diagnosis has perhaps been missed in the past.

Reviews.

The Year Book of Radiology (1953-1954 Year Book Series): "Radiologic Diagnosis", edited by John Floyd Holt, M.D., and Fred Jenner Hodges, M.D.; "Radiation Therapy", edited by Harold W. Jacox, M.D., and Vincent P. Collins, M.D.; 1953. Chicago: The Year Book Publishers, Incorporated. 9″ × 6″, pp. 462, with 399 illustrations. Price: $8.00.

THIS book consists of reviews of the literature of radiology up to June, 1953. The authors stress the danger in the use of the fluoroscope in shoe fitting and point out that the method can be of little practical value in this work. There is also grave danger to the patient and operator in angiocardiography from prolonged screening. Little advance is reported on the technical side. An interesting description is given in the use of fusible metal in outlining the circulation in certain viscera. The illustrations are of high quality throughout and this is specially so in the cases of thoracic disease reported. The use of rubber bag compression of the abdomen is of value in the investigation of the œsophagus, and by its use many small hiatal hernias may be demonstrated. Interesting articles on the use of opaque media in investigations of the gastro-intestinal and genito-urinary tracts are included. In the section of radiotherapy it is reported that advances are occurring in the use of higher kilovoltages (machines of up to three million volts are now in use). Radioactive isotopes are giving good results in various conditions such as hyperthyroidism. The book is very interesting and worthy of close study.

The Megaloblastic Anæmias. By L. J. Davis, M.D., F.R.C.P., F.R.C.P.E., F.R.F.P.S.G., F.R.S.E., and Alexander Brown, M.D., F.R.C.P.E., F.R.F.P.S.G.; 1953. Oxford: Blackwell Scientific Publications. 8½″ × 5½″, pp. 124, with 12 illustrations. Price: 21s.

THIS monograph on the megaloblastic anæmias by L. J. Davis and Alexander Brown has been written in response to an invitation; it is Publication Number 222 in "American Lectures in Internal Medicine" edited by Roscoe L. Pullen. Since it was desired that the book be addressed to the general physician rather than to the expert hæmatologist, the authors state in their preface that they have tried "to keep uppermost those general principles which are of clinical importance and to submerge to a subordinate level theoretical discussions and technical minutiæ". They have accomplished this purpose with admirable conciseness and clarity. The book commences with a discussion of its title. The designation "megaloblastic anæmia" has not yet gained universal acceptance among clinicians, though it is seventy-four years since Ehrlich described large nucleated red cells in the blood of a patient with pernicious anæmia and named them megaloblasts. In the first chapter, the history of the subject is discussed briefly but adequately. It is always of extraordinary interest to look back at this story and to realize how our knowledge of it has broadened during the past twenty-five years and how the details of the picture are gradually being filled in. Bone marrow biopsy and puncture, the discovery and development of liver treatment, and the study of anæmias due to deficient diets have all contributed to this. As these authors point out, there was a stage, about the middle thirties of this century, when it was commonly believed that the terms "megalocytic", "macrocytic" and "megaloblastic" were synonymous. They write that "advances in knowledge during the past fifteen years or so have shown that this usage is unjustified, for it is now well established that megaloblastic anæmias are not invariably macrocytic and that a macrocytic peripheral blood picture is not necessarily associated with megaloblastic erythropoiesis. . . . The term macrocytic anæmia should be used only in a wider sense to embrace any anæmias characterized by big erythrocytes, and with a full appreciation that a megaloblastic anæmia may be megaloblastic or normoblastic". They divide normoblastic macrocytic anæmias into two main groups, in one of which—the "pseudo-macrocytic" anæmias—the supposed macrocytosis is due to the presence of a high proportion of reticulocytes. (An experienced hæmatologist would surely hardly mistake this "pseudo-macrocytosis" for the real thing; still, perhaps it is as well to point out the possible pitfall.) In their second group the macrocytosis is genuine in that a varying proportion of the mature erythrocytes are larger than normal. They have encountered examples of this type of anæmia in patients suffering from scurvy, myxœdema, hepatic cirrhosis, malaria, Hodgkin's disease and other forms of reticulo-endotheliosis; leuchæmias, acute and chronic; myelomatosis, leuco-erythroblastic anæmia, hæmolytic anæmias, hypoplastic and aplastic anæmias. It is pointed out that although these

normoblastic macrocytic anæmias are not common and, of course, are by no means always present in the conditions listed above, it is essential that they should be distinguished clearly from the megaloblastic anæmias from which they differ so fundamentally in respect of pathology, treatment and prognosis.

These authors' classification of megaloblastic anæmias, necessarily provisional because our knowledge of their causation is fragmentary, is as follows: (*a*) Addisonian megaloblastic (pernicious) anæmia, a disease which is ætiologically associated with irreversible degeneration of the gastric mucosa; and (*b*) non-Addisonian megaloblastic anæmias, which are not due to degeneration of the gastric mucosa, are not necessarily progressive, and are in many cases associated with an underlying pathological state. This type of megaloblastic anæmia has been described in association with the following conditions: tropical sprue, idiopathic steatorrhœa and cœliac disease; structural abnormalities of the stomach and intestine; malnutrition; infestation with *Diphyllobothrium latum*; pregnancy and the puerperium; infancy and childhood; hepatic disease, endocrine disorders; and neoplastic infiltration of the bone marrow. The remaining group, bearing no known or suggested ætiological associations, is designated by Davis and Brown as "idiopathic refractory megaloblastic anæmia". These principles of classification are clearly laid down in the first chapter which thus provides a policy speech for the book. Succeeding chapters, written with the same admirable brevity and lucidity, deal with therapeutic preparations, with the diagnosis of the two main groups of megaloblastic anæmias and with their ætiology. Of the illustrations, seven are photomicrographs of the cells found in blood or marrow films, and five are charts showing responses to treatment. There is a carefully selected bibliography. The authors rightly emphasize the fact that throughout the world megaloblastic anæmias of all types are rare diseases compared with the far commoner iron-deficiency anæmias, and that the vast quantities of liver extracts and similar preparations that are sold each year can bear little relation to the legitimate need for these substances. This book is a small one of 87 pages; it could be read with advantage by all general practitioners and indeed by all practising physicians.

Essential Urology. By Fletcher H. Colby, M.D.; Second Edition; 1953. Baltimore: The Williams and Wilkins Company. Sydney: Angus and Robertson, Limited. 9″ × 6¼″, pp. 660, with 352 illustrations. Price: 86s.

As evidence of its popularity, this book enters its second edition in three years, while reprints in addition have appeared annually. Colby does not claim this to be a comprehensive text-book, but to give the important facts of genito-urinary diseases in their diagnosis and basic principles, together with an outline of their treatment. In this he has succeeded well, and it will be useful, especially to students and "residents".

The first one hundred and twenty pages are devoted to embryology, anatomy and physiology, and then follows a rather brief chapter on methods of examination.

Diseases of the various organs are then considered in a brief but clear manner. Little adverse comment can be made, but perhaps the chief weakness is the consideration of benign prostatic hypertrophy. The pathology and diagnostic pictures are adequate, but the treatment is disappointing. The different methods are compared in a table. When describing the suprapubic approach the author mentions as disadvantages the difficulty in controlling hæmorrhage and delayed healing from urinary fistula, while he also talks of a widely opened bladder. It is evident that the author is not familiar with the Harris operation, and followers of the Harris suprapubic technique would not agree that such disadvantages exist.

As this subject fills such a large part of urological practice, one might have expected a fuller account of the operations used, and some detail of the pre-operative and post-operative routines.

The author subscribes to the modern view of ruptured kidneys that often more harm may be done by conservation than by exploration. As he says: "Conservative treatment is justified in some instances of ruptured kidney." He does not hesitate to use retrograde pyelography, and if severe damage or extravasation is demonstrated then operation is indicated.

Ureteric diseases are well covered, and the existence of strictures is recognized. Treatment is by dilatation with bulbs.

Vermooten's sign for ruptured membranous urethra is mentioned, and an excellent up-to-date account of Reiter's disease is given with a discussion of the likely part played by "L" organisms.

The section on carcinoma of the prostate is excellent, and the roles of bilateral adrenalectomy and total p ostatectomy are discussed.

Altogether this is a very sound, well written book, set up with the usual Williams and Wilkins Company's high standard. It fulfils the author's object, and should maintain its popularity.

Symptoms of Visceral Disease: A Study of the Vegetative Nervous System in its Relationship to Clinical Medicine. By Francis Marion Pottenger, A.M., M.D., LL.D., M.A.C.P.; Seventh Edition; 1953. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 9″ × 6″, pp. 446, with 87 text figures. Price: £3 18s. 9d.

THIS is the seventh edition of a work first printed in 1919. The aim of this book is to give a comprehensive study of the relationship of the visceral nerves to the symptoms of disease and hence an explanation of symptomatology upon this basis. The endocrine influence on cellular function is correlated, where relevant, with the function of the vegetative system.

The book is divided into three sections, anatomical and physiological, a discussion of symptoms and their relationship to this system, and a more detailed discussion of symptoms of the more important viscera.

The introduction is a masterly exposition of modern diagnosis, an appreciation of disordered physiology, based on accurate and careful clinical observation and a correct interpretation of relevant laboratory procedures. The significance of the autonomic system in the clinical manifestations of disease is thus fully and factually discussed.

The study is most stimulating for its excellent presentation and the detailed references to the literature so consistently found throughout the monograph.

The bias of the author to his premise is noted, but this does not detract from a valuable and comprehensive study. It is surprising in this regard that the newer concepts of the ætiology of Hirschsprung's disease are not included in the work, and hence relevant therapeutic measures. His explanation for the hectic flush noted in "spastic colon" and "intestinal stasis" is not convincing, in the presence of the unstable vasomotor system, so commonly associated with these entities.

Again the chapter on the liver is disappointing, as it must be in view of the confusion that exists about the innervation of this organ. The place of cellular function itself in a discussion of this nature is fully appreciated by the author, and is the subject matter of an excellent chapter.

This is a lucid and comprehensive study of the autonomic nervous system, and though Dr. Pottenger's conclusions will not all be generally accepted they should stimulate further study along the lines suggested by the book. The book is illustrated profusely and well.

Diagnosis of Acute Abdominal Pain. By William Requarth, M.D., with a foreword by Warren H. Cole, M.D.; 1953. Chicago: The Year Book Publishers, Incorporated. 8¾″ × 6″, pp. 244, with 79 illustrations. Price $5.00.

IN this book W. Requarth has attempted to classify diseases according to their urgency of treatment, and secondarily according to their type of onset. Though this method is a sensible one, it poses certain problems, which the author has solved somewhat imperfectly. The same disease may vary so greatly in its intensity from patient to patient as to present very varying degrees of urgency in its treatment, and so needs repeated consideration in various chapters. Treatment may also require much modification, depending on the stage at which the disease is first seen. Thus a condition like acute appendicitis, which is a proper surgical emergency in its earlier stages, should be treated by non-surgical methods in the later stages of mass formation.

And finally there are certain diseases, such as acute cholecystitis, in which the difference of opinions amongst clinicians is so acute that an author should have the courage to state dogmatically his own opinion as to the necessity or not of emergency surgical treatment.

The author has solved these problems largely by repeated considerations, and this is undoubtedly a weakness of this method.

Australian readers will be most interested in the exposition of the value of radiological methods in the diagnosis of acute abdominal disease. No better consideration of these methods

has been seen than is contained in this book. Conversely, the clinical aspects of diagnosis are weak by Australian standards. Little effort is made to analyse the basic causes of abdominal pain, while in the chapter on acute intestinal obstruction almost certainly erroneous explanations are offered as to the differences between small gut and large intestinal obstructions.

Many readers will value this book for its exposition of the ancillary methods of diagnosis, but apart from this it cannot be said to have fulfilled completely the purpose set out in its title.

The Year Book of Drug Therapy (1953-1954 Year Book Series). Edited by Harry Beckman, M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 8" × 5¼", pp. 538, with 73 illustrations. Price: $6.00.

THE editor's introduction to this Year Book provides both a summary of the more important material abstracted in the book and a survey of advances in therapeutics for the past year. As might be expected, particular attention is paid to the antibiotics, attention being drawn not only to the newly introduced members of the group and to wider experience in their use, but also to further knowledge on disadvantages associated with certain antibiotics and how they should not be used. The chemotherapy of tuberculosis has been the subject of some interesting studies during the year, and the field of cardio-vascular diseases has seen the introduction and establishment of new drugs. In other fields also there have been developments that appear likely to stand. An examination of this Year Book should be rewarding to anyone concerned with drug therapy. The several sections are devoted to allergy, antibiotics and sulphonamides, cardio-vascular diseases, dermatology, endocrinology, hæmatology, internal medicine, neuro-psychiatry, obstetrics and gynæcology, ophthalmology, oto-rhino-laryngology, pædiatrics, surgery and venereology. In the section on cardio-vascular diseases, particular attention is paid to arrhythmias, congestive heart failure, coronary disease, endocarditis, hemiplegia, hypertension, peripheral vascular diseases and phlebothrombosis. The principal subjects in the section on internal medicine are chest diseases, *diabetes mellitus*, infectious diseases, kidney disturbances, liver disorders, neoplastic diseases, pain, peptic ulcer, poisoning, rheumatic disorders, thyrotoxicosis, ulcerative colitis, regional enteritis and jejunitis, and worms and flukes. This Year Book offers a good deal that is of interest and value to those working in practically every field of medical and surgical practice.

Dermatologic Medications. By Marguerite Rush Lerner, M.D., and Aaron Bunsen Lerner, M.D., Ph.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 7½" × 5", pp. 184. Price: $3.50.

THIS little book could well be on the bookshelf of the general practitioner as well as of the practising dermatologist, as it gives a list of therapeutic agents with the indications for their use and what is more important their mode of application. It is up to date with all the recent drugs used in dermatology. In the list of antihistamines no mention is made of their tendency to cause sensitization rashes from local application. The authors quite rightly state that penicillin and streptomycin should not be applied topically because of the high incidence of sensitization. Useful sedatives and hypnotics are listed. Ointment bases and their uses are fully discussed. Fungicidal and fungistatic agents are listed, and their mode of use and application indicated. In treatment regimes, *acne vulgaris*, eczematous dermatitis, psoriasis, disseminated neurodermatitis, *lupus erythematosus* and stasis ulcer are discussed and the latest line of treatment is given. The book gives a simple and useful approach to dermatological medication.

The Year Book of Urology (1953-1954 Year Book Series). Edited by William Wallace Scott, M.D., Ph.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 8" × 5¼", pp. 376, with 84 illustrations. Price: $6.00.

THE editorial introduction to this Year Book takes the unusual form of a special article on medical education with particular reference to the training of the surgical specialist. This article is brief but thoughtful and should be of interest to a great many. The material abstracted, which comes from a wide variety of journals, is grouped under the main headings of general considerations, the kidney, the adrenals, the ureter, the bladder, the prostate and the genitalia. Amongst the general considerations are infections, including gonorrhœa, calculi, anæsthesia, urography and instruments and appliances. Subjects considered in the section on the kidney are anomalies, tumours, tuberculosis, trauma, nephritis and nephrosis, hypertension, renal physiology, renal insufficiency and surgical technique. The section on the adrenals is mainly made up of reports of cases of phæochromocytoma and considerations of the surgical approach to the adrenals. Apart from a short subsection on anomalies, all the space devoted to the ureter is taken up with descriptions of surgical technique in surgery to the ureter. In the section on the bladder, there are subsections on tumours, micturition, urogenic bladder, urinary extravasation and surgical technique. The section on the prostate has four subheadings: transurethral resection, suprapubic, retropubic and perineal prostatectomy, calculi and carcinoma. In the concluding section on the genitalia, subsections are devoted to the penis, the urethra, hypospadias, tumours of the testis, scrotal swellings, the epididymides and infertility.

Notes on Books, Current Journals and New Appliances.

Pediatric Clinics of North America: Symposium on Cardio-vascular Diseases; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. 9" × 6", pp. 288, with 96 illustrations. Price: £6 per year.

THE recently established *Pediatric Clinics of North America* will need no commendation to the many who know the practical usefulness of *Medical Clinics of North America* and *Surgical Clinics of North America*. To others who examine for themselves the first number, it will commend itself. In general production it is of the same satisfactory quality as its elder siblings, and its contents have a corresponding appeal. A number is to be published every three months.

This first number (February, 1954) is devoted to a symposium on cardio-vascular diseases. Most attention is paid to congenital cardio-vascular anomalies, 11 articles covering the pathology, diagnosis and management of these conditions from the points of view of the physician, the surgeon and the anæsthetist. Other articles, all of which relate to the child or infant as subject, deal with the diagnosis of heart disease, cardiac arrhythmias, cardiac hypertrophy, and the diagnosis, treatment and prevention of rheumatic fever. Some, at least, of these articles will interest all pædiatricians, and most others who are concerned with the pædiatric field will find something of value.

Pædiatrics, as the editors suggest in their foreword, may well be thought of, not as a specialty of medicine, but as a discipline of medicine confined to a special group of people and embracing all the facets and facts of internal medicine and surgery. This being so, the new arrival in the *Clinics* family is a welcome little brother with individual rights and prospects of a useful life ahead.

Modern Treatment Yearbook 1954: A Yearbook of Diagnosis and Treatment for the General Practitioner. Edited by Cecil Wakeley, Bt., K.B.E., C.B., LL.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S.; 1954. London: Published for The Medical Press by Baillière, Tindall and Cox, Limited. 9" × 5¼", pp. 376, with 69 illustrations. Price: 21s.

THE form of this annual volume is now well known. It is made up of self-contained chapters, each on some aspect of treatment and contributed by an authority. This year there are thirty-five chapters, dealing with subjects ranging from rheumatoid arthritis to uterine fibroid tumours. Since the editor is the President of the Royal College of Surgeons, it is not surprising that surgical subjects tend to predominate. As an essentially practical volume this Year Book can be commended, especially to general practitioners.

Edinburgh Post-Graduate Lectures in Medicine. Volume VI; 1953. Edinburgh: Published for the Honyman-Gillespie Trust by Oliver and Boyd. London: Macmillan and Company, Limited. 10" × 6¼", pp. 520, with 176 illustrations. Price: 21s.

THE latest volume of the "Edinburgh Post-Graduate Lectures in Medicine" is an attractive work. The thirty-four lectures comprised in it were given at the Royal Infirmary, Edinburgh, under the auspices of the Honyman-Gillespie Trust. The lectures were founded in terms of a

bequest by the late Mrs. Honyman-Gillespie, the first series of lectures being given in 1937. All the lectures in the present volume have appeared in the *Edinburgh Medical Journal*. The committee which nominates and invites the lecturers consists of the Professors of the Practice of Medicine, of Systematic Surgery and of Obstetrics in the University of Edinburgh; the Presidents of the Royal College of Physicians and of the Royal College of Surgeons of Edinburgh; the senior non-professorial physicians and surgeons on the staff of the Royal Infirmary; the editor of the *Edinburgh Medical Journal*; and the Director of Post-Graduate Studies; the Chairman of the Post-Graduate Executive Committee acts as convener. With such a committee responsible for the nomination of lecturers one would expect to have a volume of outstanding merit. A few of the titles with the names of their authors will indicate the kind of subject which is included. J. Halliday Croom contributes "The Outlook for the Diabetic"; C. F. W. Illingworth writes on "The Acid Secretion of the Stomach"; Charles Cameron's article is entitled "Tuberculosis: An Incident or a Disease?"; Ronald H. Girdwood writes on "Vitamin B_{12} and Folic Acid in the Megaloblastic Anæmias"; W. Ritchie Russell writes of poliomyelitis; S. Roland contributes "Isotopes as an Aid to Diagnosis". This is a book for the clinician who wishes to read medicine at leisure by the fireside.

Favourite Prescriptions. Edited by Heneage Ogilvie, K.B.E., D.M., M.Ch., F.R.C.S., and William A. R. Thomson, M.D.; Second Edition; 1954. London: *The Practitioner*. 9" x 6", pp. 88. Price: 5s.

THE first edition of this little book was largely a reissue of a symposium which appeared in *The Practitioner* in July, 1950. After several reprintings it is now issued in a revised edition, and another chapter on favourite prescriptions for children has been added. Now the book is made up of chapters on favourite prescriptions as they relate to general practice, children, pulmonary diseases, diseases of the nervous system, skin diseases, diseases of the ear, nose and throat, ophthalmology, surgery and physical medicine. Each is contributed by an experienced clinician in the corresponding field, who discusses practical therapeutics and gives details of prescriptions which he has found of value in practice. A commendable feature is the fact that both the ingredients and the doses of the prescriptions are written in English.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Clinical Chemistry in Practical Medicine", by C. P. Stewart, D.Sc. (Dunelm.), Ph.D. (Edinburgh), and D. M. Dunlop, B.A. (Oxon.), M.D., F.R.C.P. (Edinburgh), F.R.C.P. (London); Fourth Edition; 1954. Edinburgh and London: E. and S. Livingstone, Limited. 8½" x 6", pp. 326, with 26 text figures. Price: 21s.

Intended for the practitioner, the house physician and the senior student, the book deals with chemical analyses, tests and so on in relation to chemical pathology.

"Electrocardiography", by E. Grey Dimond, M.D.; 1954. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical), Limited. 11½" x 9", pp. 262, with 272 illustrations. Price: £7 7s.

The book is presented as a method of teaching; the author holds that electrocardiography is best taught by a series of organized progressive lectures.

"Text-Book of Ophthalmology", by Stewart Duke-Elder, K.C.V.O., M.A., LL.D., D.Sc. (St. And.), Ph.D. (London), M.D., F.R.C.S., Hon. D.Sc. (Northwestern), M.D. (Dublin), D.M. (Utrecht, Strasbourg), F.R.C.S. (Edinburgh), F.A.C.S.; 1954. Volume VI: Injuries. London: Henry Kimpton. 10" x 7", pp. 1224, with 1145 illustrations, 144 in colour. Price: 105s.

This volume is the last but one of this work. Volume VII is now in the press.

"The Essentials of Materia Medica, Pharmacology and Therapeutics", by R. H. Micks, M.D. (Dublin), F.R.C.P.I.; Sixth Edition; 1954. London: J. and A. Churchill, Limited. 8" x 5½", pp. 444. Price: 21s.

The aim is to teach the junior student the principles of pharmacology and to provide the senior student and physician with guidance in the choice and administration of drugs.

"Good General Practice: A Report of a Survey", by Stephen Taylor, M.D., M.R.C.P.; 1954. Geoffrey Cumberlege: Oxford University Press. Melbourne: Oxford University Press. 8½" x 5½", pp. 628, with 56 illustrations. Price: 20s. 9d.

The survey was made at the instigation of the Nuffield Provincial Hospitals Trust into the conduct of ninety-four general practices.

"Gesundheit durch Krankheit: Das Rätsel der Immunität", by Hans Joachim Flechtner; 1954. Düsseldorf: Econ-Verlag GMBH. 8½" x 5½", pp. 352, with 30 illustrations. Price: *DM 14,80*.

In this book, "Health Through Sickness", the author discusses the question of immunity.

"The Year Book of Neurology, Psychiatry and Neurosurgery (1953-1954 Year Book Series)"; Neurology, edited by Roland P. Mackay, M.D.; Psychiatry, edited by Nolan D. C. Lewis, M.D.; Neurosurgery, edited by Percival Bailey, M.D., and Oscar Sugar, M.D.; 1954. Chicago: The Year Book Publishers, Incorporated. 8" x 5½", pp. 604, with 132 illustrations. Price: $6.00.

One of the Practical Medicine Series of Year Books.

"The Surgical Clinics of North America"; 1954. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical), Limited. New York Number. 9" x 6", pp. 304, with 86 illustrations. Price: £7 5s. *per annum* with cloth binding and £6 *per annum* with paper binding.

Comprises a symposium on new techniques in surgery—the rationale and methods. There are 19 articles with an additional article on inguinal hernioplasty.

"Illustrated Review of Fracture Treatment", by Frederick Lee Liebolt, A.B., M.D., Sc.D., LL.D.; First Edition; 1954. Los Altos, California: Lange Medical Publications. 10" x 7", pp. 240, with 605 illustrations. Price: $4.00.

The book is intended for the medical student, the house officer and the general practitioner; it is intended to serve as a supplement to standard text-books.

"Congenital Heart Disease: An Illustrated Diagnostic Approach", by Henry S. Kaplan, M.D., and Saul J. Robinson, M.D.; 1954. New York: McGraw-Hill Book Company, Incorporated. 11" x 8½", pp. 138, with 146 illustrations. Price: $12.50.

The first section of the book is concerned with the principles of differential diagnosis and the second is an atlas.

"Diseases of the Liver", by Mitchell A. Spellberg, M.D., F.A.C.P.; 1954. New York: Grune and Stratton, Incorporated. 11" x 8", pp. 656, with 93 illustrations, three in colour. Price: $16.50.

Written from the viewpoint of a clinician for clinicians.

"Findlay's Recent Advances in Chemotherapy", by F. C. O. Valentine, F.R.C.P., and R. A. Shooter, M.A., M.D.; Third Edition; 1954. Volume III: Antibiotics. London: J. and A. Churchill, Limited. 8" x 5½", pp. 300, with seven illustrations. Price: 27s. 6d.

An attempt to describe the progress made in recent years in the treatment of bacterial, rickettsial and viral infections.

"Preservation and Transplantation of Normal Tissues", edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., B.Ch., and Margaret P. Cameron, M.A., A.B.L.S., assisted by Joan Etherington; 1954. London: J. and A. Churchill, Limited. 8½" x 5½", pp. 248, with 55 illustrations. Price: 25s.

A Ciba Foundation Symposium. There are seventeen chapters, most of which are followed by a discussion.

"Progress in Clinical Surgery", by various authors, edited by Rodney Smith, M.S., F.R.C.S.; 1954. London: J. and A. Churchill, Limited. 9½" x 6½", pp. 424, with 112 illustrations. Price: 36s.

Thirty chapters by twenty authors.

The Medical Journal of Australia

SATURDAY, AUGUST 7, 1954.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

FACILIS DESCENSUS AVERNO.

VIRGIL wrote in the sixth book of his *Æneid*: "*Facilis descensus averno; . . . sed revocare gradum . . . hoc opus, hic labor est.*" We know that the descent into hell would be easy and that once we had reached its depths it would be the greatest toil and labour to retrace our steps and to regain once more the normal state of healthy living—in other words, the good life, above. We have been told that wide is the gate and broad is the way that leadeth to destruction and strait is the gate and narrow is the way which leadeth unto life. We shall probably agree that the greatest hell which man knows is the hell that may exist within himself. There are no doubt many who appear to be indifferent to this point of view, or shall we call it this state. The present intention, however, is not to enter into a philosophical discussion on the state of heaven or hell in human life generally, but rather to consider the state of *avernus* in the world of medicine and among practitioners of medicine collectively and individually. The descent into the hell which we would consider is a gradual process away from light and the good life into darkness, to end eventually in decay and spiritual death. The descent of any slope begins as a rule slowly, and as our steps or the wheels of the vehicle which bears us become accustomed to the way, speed gathers and it eventually becomes extremely rapid. A start has to be made on this downward path, and as the French proverb has it, "*Il n'y a que le premier pas qui coûte*". Once the first step has been taken the second is, of course, easy. The first step may not be a deliberate downward movement; it may be just that we intend to do something that would be a credit to us and we fail to do it. The old proverb states that the road to hell is paved with good intentions, and there is another proverb which says that hell is paved with good intentions and roofed with lost opportunities.

We may take it that medical men and women after graduation start their professional lives with a knowledge of the difference between good and evil. They know what it means to walk in the light, for they have been trained in institutions where the sick are cared for and the feeble are supported, they have learned something of the great men and women who have gone before them in medicine and they have subscribed to the ancient Hippocratic oath which, if it does nothing else, thrusts self into the background. Even in the short periods during which they have been engaged in hospital practice, they have seen significant advances made in knowledge about individual diseases and in the treatment which must be adopted for them. This, apart from any precepts which they will have received from their teachers, shows them that there can be no standing still in medicine, that what is new today may be old and become superseded tomorrow, and that unless they try to understand and to assimilate the new advances, they will be left with insufficient armour to make their way along the path of medicine. No doubt most of us at our graduation have determined that we shall not be left in the backwash among the lazy, but that we shall keep ourselves thoroughly up to date and not falter in our intentions. We all know from experience how easy it is to set these good intentions on one side, to put by something which we know that we should read until a more convenient season. Sometimes the convenient season never comes. We are the losers and we have made one step on the downward path. These early steps that have been lost may be recovered; once the habit of neglect of reading becomes ingrained it is not so easily reformed. There is another side to this picture of medical knowledge. The medical practitioner must not only be ready to receive, he must be prepared to give. He accepts what others have done to advance medical science and he uses it to the advantage of his practice—in other words, for the good of his patients and of himself. He must go further than this. He must keep alive his powers of observation and also his powers of deduction and be prepared to add something to the general structure of the edifice which he is supposed to adorn. So much for the graduate's life on the scientific side of medicine. We must also think of his existence in its corporate life. The vast majority of medical graduates in Australia belong to the British Medical Association, which has as its major object the advancement of the medical sciences. Some practitioners belong to other organizations, some of them of a specialist nature. In any case, by joining these associations and bodies they accept certain privileges, but they also assume responsibilities. He is a poor creature who allows everybody else in a society or association to do the work which he should help to do. Bodily weariness may be very real and may prevent many an ardent member of an association from taking an active part in its affairs, but there is something wrong if bodily weariness is always present and is always the excuse for absence. Such a condition cannot be justified in any circumstances. If we look at the annual meetings of most of the Branches of the British Medical Association in Australia we see that they are treated almost as though they were despised. In the matter of elections for office-

bearers, the Branch executive officers have almost become used to the fact that if 35% or 40% of members vote at the election, that number is regarded as the usual thing. Not so long ago, at the annual meeting of one of the Branches, more than half of the audience was composed of members of the Council. That state of affairs is a standing disgrace to the profession of medicine as a whole.

Another aspect which has to be considered is the medical practitioner in relation to his patients. A great deal might be written about this, but it must suffice to state that according to the Hippocratic oath the patient shall always be the first consideration. It would be well for all of us to do a little heart-searching and to ask ourselves whether we always observe this stipulation, whether we always go to the patient's aid when we are asked to do so if it is within our ability to go, whether we give of our best when we do see him and whether we treat him gently with the consideration due to a sick man and a brother human being. Lastly, we have to think of our duty to ourselves. We start our professional lives as "children of the light". We must aim to walk continually in the light and not to allow ourselves to slip into the darkness. We owe it to ourselves to try to live the good life and we know perfectly well that this is not an easy matter. We shall never be really worthy practitioners of medicine unless we do make some attempt to live the good life. Saint Paul was not the only person who had reason to say that he kept his body under and brought it into subjection, lest by any means when he had preached to others he himself should be a castaway. It is, of course, the control of the self which makes possible fulfilment of any obligation in life. If we are to do our duty to the profession of medicine and to our patients, we must do our duty to ourselves. Only by this means shall we keep from descent into the *avernus* which is in the end a spiritual death. There is a proverb which says that it is never too late to mend. This has its application here. The human spirit, like many tissues of the human body, has astounding powers of regeneration, and even though the attempted retracing of the steps is difficult, even though the *opus* and the *labor* are extreme, it is never too late to try to recover what is lost. At the present time, medicine in Australia stands, as it were, at the crossroads when it can carry out what it has set its hand to in the matter of a national health service. It can do this only if it walks in the light and does not take steps which may plunge it down into the abysmal darkness of the worship of self and forgetfulness of what we declared was our aim and object at graduation. The effort is worth while, but we must remember that recovery cannot be a piecemeal affair, it must be a recovery of the whole body—a fulfilment of our duty to ourselves and so to medicine in general and to our patients.

Current Comment.

PELVIC INSUFFICIENCY.

IT has long been recognized that softening and increased mobility of the pelvic joints develop to a varying degree in pregnancy. Recently D. Berezin[1] has investigated 142 patients in whom these changes led to symptoms of pain and tenderness over the pubic symphysis and sacro-iliac joints with impairment of locomotion. To this condition, occurring in pregnancy or after delivery, he gives the name pelvic insufficiency. The patients studied came from two maternity centres in south-west Sweden. In addition, Berezin investigated other disturbances associated with pregnancy and the puerperium which seemed to occur with, or have an ætiology similar to, pelvic insufficiency. He attempted to correlate and compare the onset and course of these disorders with the latter in its pre-partum and post-partum forms. Such conditions were: nocturnal paræsthesia of the extremities (acroparæsthesia), painful muscle contractions in the legs (nocturnal cramps), paræsthesia and slight sensory disturbance over that area of the thigh supplied by the external cutaneous femoral nerve (*meralgia paræsthetica*), increased excitability of the peripheral nerves (manifest or latent tetany) and increased density of the ilium near the sacro-iliac joint (*osteitis condensans ilii*).

The writer first discusses certain histological, radiological and endocrine aspects examined by earlier workers, including observations on animals. He thinks that the literature suggests the following conclusions: (i) Pelvic relaxation in women is, in principle, similar to that occurring in many animals. (ii) Pelvic relaxation similar to that occurring in animals in pregnancy can be produced by the administration of œstrogen alone or of relaxin after œstrogen priming. (iii) Small ruptures and hæmorrhages are common findings in the relaxed joints of women as well as of experimental animals. At autopsy on pregnant women Berezin found œdema of joint cartilages with hypertrophy and increased vascularity of the supporting ligaments. Sections often showed penetration of the subchondral bony plate by very vascular bone marrow leading to proliferation and softening of cartilage in the joints and subchondral bone. Animal dissections revealed similar changes. Increase in width of the symphysis, progressing from the early months of pregnancy until thirty-two weeks, had been demonstrated frequently by X rays. This varied from 0·5 to 7·0 millimetres with an average of 1·5 to 3·0 millimetres. Similar progressive increases in mobility of the pubic ends and sacro-iliac joints have been observed by many radiologists. Within a few months of delivery reversal of these changes takes place, but neither the pre-gravid width nor the stability of these joints is completely regained.

In the author's pelvic insufficiency series pain and tenderness over the pelvic joints were present in all cases, instability (shown by Trendelenburg's sign) in 73% and a waddling gait in 30%. In 58% of the series tenderness over the adductor muscles of the thigh was elicited. X-ray study proved that the occurrence and severity of these symptoms could be equated to the degree of mobility measured between the symphyseal ends, but not to the amount of symphyseal widening. With every 1000 deliveries after 1945 six new cases of pelvic insufficiency occurred. Careful follow-up in subsequent pregnancies disclosed the remarkable recurrence rate of 75%. This was uninfluenced by previous treatment. Recurrent attacks usually appeared earlier and with greater severity, but could be sometimes suppressed by the prophylactic use of calcium and vitamin *D*. Treatment combined bed rest with calcium and vitamin *D* therapy during the acute phase of an attack. When ambulation was resumed, a supporting corset proved effective. Primarily, most patients responded to these measures, but recurrences often proved refractory. The speed of recovery usually varied with the severity of the initial symptoms. If symptoms persisted longer than twelve months, prognosis for complete recovery was poor.

For comparison with the other disorders of pregnancy the investigator used two control groups of similar size. Group 1 consisted of non-pregnant women of reproductive age and Group 2 of pregnant women without pelvic insufficiency. Acroparæsthesia developed in 53% of the pelvic insufficiency series, but only in 6% of Group 1 and 15% of Group 2. Never appearing before the pregnancy associated with the primary attack of pelvic insufficiency,

[1] *Acta obst. & gynec. scandinav.*, 1954, Volume XXXIII, Supplement 3.

it usually subsided as the latter improved. Rapid relief of symptoms followed the administration of calcium and vitamin *D* by mouth. Nocturnal cramps occurred in 8% of Group 1 and in 45% of Group 2, usually in the sixth and seventh months, but about a quarter of the cases appeared before the fifth month. Of the pelvic insufficiency series 85% experienced nocturnal cramps which were generally more severe than in Group 2. Like acroparæsthesia, the appearance and course of attacks followed the pattern of the associated pelvic insufficiency. Again calcium and vitamin *D* were specific therapy for the condition. Compared to an incidence of 0·5% in the control groups, *meralgia parœsthetica* troubled 20% of the pelvic insufficiency series. It became manifest later than this static disorder, but usually disappeared when the latter resolved.

Chance observation of spontaneous tetany attacks in a patient with pelvic insufficiency stimulated an attempt by Berezin to correlate the two conditions. Among his 142 patients he found six with symptoms of manifest tetany. The presence of Trousseau's phenomenon or Chvostek's sign indicated latent tetany in 34% of the series, a far more common occurrence than among the controls (3% to 4%). Curiously enough, latent tetany frequently antedated the onset of pelvic insufficiency or occurred well after it. Thus it represented a permanent aberration in the patient's physiology not resulting from any particular pregnancy. Of interest was the striking reduction of nerve irritability in these patients for two weeks after delivery. This argued disturbance of the possible endocrine causal factors in the genesis of latent tetany. However, normal serum calcium and phosphorus levels excluded any parathyroid disorder.

Previous investigators of *osteitis condensans ilii* had noted a frequent history of low backache and pelvic pain occurring during pregnancy or after delivery, often repeated with subsequent pregnancies. These symptoms clearly coincide with Berezin's conception of pelvic insufficiency. Indeed he was able to demonstrate an incidence of 24% of iliac sclerosis in this series, but only 3% in a control group. Two to three years after the onset of pelvic insufficiency bony changes in the ilium usually commenced near the caudal end of the sacro-iliac joint and advanced in a supero-lateral direction without producing symptoms. Occasionally sclerosis did not progress, but in no case did it disappear. Berezin considered *osteitis condensans ilii* a late manifestation of pelvic insufficiency, being a reaction in the iliac bone to softening and trauma to the adjacent sacro-iliac joint.

Berezin has conducted a careful and well-controlled investigation supported by a wide survey of the literature. He has shown that relaxation and increased mobility of the pelvic joints in pregnancy lead to a clear-cut symptom complex. After parturition the same condition arises when joint trauma during delivery may be an additional factor. He has established that acroparæsthesia, meralgia, nocturnal cramps, tetany and *osteitis condensans ilii* are strongly associated with this symptom complex, suggesting a common ætiology. Response to vitamin *D* and calcium of pelvic insufficiency, acroparæsthesia, meralgia and cramps suggests faulty calcium metabolism, despite normal serum calcium and phosphorus levels. An endocrine disorder responsible for excessive joint changes from which the chief symptoms stem may well be a potent cause of the associated conditions investigated. Finally, a neurogenic factor is suggested by peripheral nerve involvement in acroparæsthesia, meralgia, nocturnal cramps and manifest or latent tetany. Whatever the ætiological key, it seems certain that it could open the door to a new and important clinical field.

PIGMENT AND PIGMENT TUMOURS.

INTERESTING basic views on pigment and pigment tumours are put forward in a symposium on the subject which has been recently published.[1] The subject is dealt with from three viewpoints: the biochemical basis of human melanin pigmentation, the histogenesis and clinico-pathological correlation of nævi and malignant melanomata, and the management of pigmented nævi. The biochemical aspect is approached by T. B. Fitzpatrick and A. B. Lerner, who consider normal melanin pigmentation and selected pigmentary disturbances in man. They define human melanin as a brown or black pigment formed by the enzymatic oxidation of tyrosine by tyrosinase contained in the cytoplasm of pigment cells located in the skin and uveal tract. They cite histological and histochemical studies as evidence for the belief that melanin is formed only in certain dendrite-shaped cells for which the term "melanocyte" has been proposed. They point out that evidence from embryological studies in lower mammals indicates that melanocytes are derived from the neural crest, although this has not been definitely proved to be so in man. It is stated that the process of melanin-formation in man involves the conversion of a colourless, naturally occurring amino acid tyrosine to an insoluble brown polymer. This biochemical process is carried out by the catalytic action of a copper-containing enzyme, tyrosinase. The tyrosine-tyrosinase reaction is controlled primarily by naturally occurring sulphydryl compounds in the epidermis, although the redox potential and availability of tyrosine may be limiting factors. Inhibition of human melanin formation has been noted to follow the ingestion of two organic sulphur-containing compounds, thiouracil and dimercaprol (perhaps better known as BAL). Locally applied parahydroxyphenyl derivatives have been shown to cause depigmentation of Negro skin or of hyperpigmented white skin. Normal white skin is not depigmented in this way.

On the question of pituitary gland regulation of human melanin formation, Fitzpatrick and Lerner state that this is suggested by the occurrence of pigmentation in patients receiving corticotropin containing melanocyte-stimulating hormone as a contaminant. Activity of melanocyte-stimulating hormone has been demonstrated by examination of the urine of subjects of various conditions associated with increased melanin pigmentation. The study of various inborn errors of metabolism brings forward some interesting facts. Pigmentary disturbances are found associated with blocks in the intermediary metabolism of phenylalanine and tyrosine. Decreased pigmentation occurs in association with phenyluria (phenylpyruvic oligophrenia) because of a relative deficiency of the melanin precursor, tyrosine. Lack of melanin pigment in subjects of albinism is related to the absence of the enzyme, tyrosinase, from the melanocytes. Fitzpatrick and Lerner describe as invalid the explanation of albinism on the basis of absence of melanocytes, because recent studies have shown melanocytes to be present in albino skin. The rare condition, alcaptonuric ochronosis, is associated with deposition of the brown pigment in cartilaginous tissue and, rarely, in the skin. This pigment does not have staining properties similar to melanin contained in melanocytes and probably represents polymerized homogentisic acid.

The pathologist's contribution to the symposium came from A. C. Allen and Sophie Spitz. They set out in this presentation "to trim to their basic unadorned core" the arguments for and against the epithelial origin of nævi and melanocarcinomata. On what they describe as the positive or epithelial side, they not only provide evidence for the view that the pigmented cells of the epidermis are merely altered epidermal cells of the basal and overlying layers (as witness the epidermis of dark-skinned persons or the epidermis made dark by ultra-violet or other forms of irradiation), but stress also the view that the inherent capacity of individual epidermal cells to become melanoblasts is a direct link in the evidence of their participation in the formation of junctional, compound and intradermal nævi, as well as melanocarcinomata. They emphasize that there is evidence of the direct transformation of epithelial cells into nævi and melanocarcinomata, and assert that this is the kind of evidence which seems not to have been fully utilized in the evaluation of the neurogenic concept. On the other hand, it appears to them that much of the pivotal evidence for the neurogenesis of epidermal melano-

[1] *Arch. Dermat. & Syph.*, February, 1954.

blasts, nævi and melanocarcinomata is based on questionable inferences.

In a paper on the management of pigmented nævi, Samuel B. Frank makes it clear that a major problem in this regard relates to diagnosis. Considerable difficulty can be experienced in differentiating the malignant melanoma from the benign nævus. Practically everyone will agree with him that there is no question about the proper handling of those pigmented nævi which bear definite clinical evidence or even signs suspicious of malignant change. Wide excision must be undertaken without unnecessary delay. For those nævi which do not show such gross alterations, Frank's view is that management for the present must depend on the features of the individual case and on the experience of the individual medical adviser. He regards the dermatologist as the specialist best equipped to diagnose these lesions. However, much more needs to be known about diagnosis, and various workers are attempting to deal with the problem. It is necessary to wait hopefully on the clinical application of further chemical, biological, histological and endocrinological studies aimed at providing us with a more reliable guide in the treatment of the pigmented nævus.

It is evident from the views put forward in this symposium by men who have worked extensively in this field that many aspects of the understanding of these important conditions require elucidation. Moreover, points of major disagreement between the contributors to the symposium received further emphasis and elaboration in a discussion which followed the presentation of the papers. Nevertheless, progress is being made which may be regarded as encouraging.

THE NEPHROTIC SYNDROME.

THERE are many features of the nephrotic syndrome which are not understood, such as the mechanism of proteinuria and the mechanism of œdema formation. The nephrotic syndrome is defined as œdema, massive albuminuria, hypoalbuminæmia and hypocholesterolæmia. *The Journal of Clinical Investigation* has brought out a special supplement dealing, in particular, with these aspects in eight papers by twenty-five authors.[1] In the space available it is impossible to consider each paper separately, so the results of the different investigators will be considered together. Several hypotheses have been given regarding the mechanism of proteinuria. The two which appear to be most likely are: (i) Protein normally passes into the glomerular fluid and is completely or almost completely reabsorbed by the cells of the tubules. The concentration of protein in the glomerular fluid is considered not to exceed 25 to 35 milligrammes per 100 millilitres. Decrease or absence of reabsorption of protein by the tubules is the cause of proteinuria. (ii) Proteinuria occurs as the result of changes in the glomerular wall; proteins pass into the glomerular fluid in abnormally high concentration and are excreted in the urine.

A group of workers at the Hospital of the Rockefeller Institute of Medical Research, New York, have determined the renal clearance of albumin in six young people with the nephrotic syndrome. The minimum concentration of albumin in the glomerular fluid was calculated from the rate of excretion of albumin and the endogenous creatinine-like chromogen clearance. The concentrations, adjusted to the values which, other factors remaining constant, would obtain at the normal plasma albumin concentration of 4·0 grammes per 100 millilitres, were considerably greater than the 25 to 30 milligrammes per 100 millilitres assumed to be present normally. There is evidence that some tubular absorption occurs, but its value must be small compared with the amount entering the glomerular fluid, particularly when this amount increases as concentration of albumin in the plasma is elevated towards normal by administration of concentrated albumin. It is concluded that proteinuria in these patients occurred as a result of an increase in the permeability of the glomerular walls to protein rather than solely as a result of a decrease in the reabsorption of protein by the tubules. It is considered that there is no evidence that protein may pass into the urine through the walls of damaged tubules. Almost the same group of workers have studied the plasma volume changes following the administration of concentrated human plasma albumin to patients with the nephrotic syndrome. The dilution volume of the blue dye, T-1824, ten minutes after injection was used as a measure of the plasma volume.

Albumin is constantly escaping in the urine in the nephrotic syndrome, and the change of plasma volume per gramme of albumin retained in the circulation at any moment was, in nearly all instances, less than would be obtained had the response been iso-osmotic. The results suggest that an increase in capillary hydrostatic pressure prevented the maximal iso-osmotic response. As so many factors are concerned no clear picture can be given of the mechanism of the action of albumin in effecting a net shift of water from the interstitial fluid to plasma. The mechanism of œdema formation in patients with the nephrotic syndrome was also studied. Œdema in this condition is the result of renal tubular reabsorption of filtered sodium, chloride and water in excess of that required for maintenance of a normal extracellular fluid volume. This increase in tubular reabsorption could be the consequence of a decrease in the rate of glomerular filtration or of stimuli acting directly on the tubules. Round-the-clock clearances of chloride and sodium were performed. Excretion of chloride or sodium was measured concurrently with the endogenous "creatinine" clearance. Most measurements were made before, during or after periods of diuresis, either spontaneous or induced by administration of concentrated human plasma albumin. From the results obtained it was deduced that glomerular insufficiency is the more fundamental mechanism, but that in some cases tubular factors may be more significant.

Another group of workers at the New York Hospital and the Cornell Medical Centre, New York, determined the effect of corticotropin (ACTH) on glomerular permeability to albumin in children with the nephrotic syndrome. Simultaneous renal clearances of the blue dye, T-1824, and of albumin were shown to be nearly the same in patients with the nephrotic syndrome. Furthermore, the ratio of the clearances of albumin and inulin provides a rough indication of the minimum glomerular permeability to albumin relative to the permeability to water. The ratio of clearance of T-1824 to clearance of inulin was used as a measure of glomerular filtration of albumin. ACTH, given intramuscularly, decreased this ratio strikingly in all patients. The results are interpreted as indicating that one of the favourable effects of ACTH treatment is a reversal towards normal of the increased glomerular permeability to albumin and other plasma proteins. This effect is considered to be primary to most of the other beneficial effects of ACTH.

Another group of workers at the Harvard Medical School and the Children's Medical Center, Boston, studied potassium excretion and sodium retention and the part played by the kidneys in these during the nephrotic syndrome. When hypertonic solutions of sodium salts are injected intravenously into nephrotic patients there is excessive potassium excretion in the urine, but this does not occur in normal subjects. When the sodium salt of a non-reabsorbable anion, such as thiosulphate or *p*-aminohippurate, is infused in the normal subject the anion is promptly excreted with an almost equivalent amount of sodium. In the œdematous nephrotic patient there is some limitation in the rapid excretion of sodium, and potassium excretion takes its place. If excessive potassium excretion depended on excessive sodium reabsorption as a result of glomerulo-tubular imbalance, this effect might be expected to disappear during and after diuresis. The effects of intravenous sodium loading were determined on nephritic children during accumulating œdema, during administration of ACTH at the onset of diuresis and finally when they were non-œdematous. Normal children were also studied. Excretion of infused sodium load was impaired during accumulating œdema. It was equivalent to or better than

[1] *J. Clin. Investigation*, April, 1954.

that of the control children at the onset and after completion of diuresis. Excessive excretion of potassium was observed in the nephrotic children, not in the controls. These and other observations suggest that renal tubular reabsorption of sodium and excretion of potassium in the nephrotic syndrome may represent a homœostatic kidney response, rather than a disturbance of function.

The functional capacity of the kidneys in the course of the nephrotic syndrome was studied by means of clearance tests in relation to the prognosis by another group of workers in Philadelphia and Buffalo. A total of 45 children were studied—some over several years. Common functional patterns may be distinguished in groups of patients with similar final outcome. The glomerular filtration rate is frequently, though not uniformly, reduced in patients who have, or will subsequently develop, glomerulonephritis. A rapidly progressive reduction is often the first indication of a rapidly fatal course. In patients who have a slow course the glomerular filtration rate and other functions may remain stationary for several years. In patients with the nephrotic syndrome who never develop evidence of glomerulonephritis, the glomerular filtration rate is usually normal or above normal. The tubular excretory capacity for para-amino-hippurate may be temporarily depressed during complications, but is usually normal or above normal; the ratio of glomerular filtration rate to this function is low in most patients. The urea clearance is so variable in relation to glomerular filtration rate that it cannot be used to evaluate this function. Indications as to prognosis may in many cases, though not in all, be obstained from a series of renal clearance tests, but not from a single test.

ANTICOAGULANTS IN CORONARY OCCLUSION.

SINCE anticoagulants were introduced for the treatment of coronary occlusion there has been much discussion about the value of the treatment. At a meeting of the Royal Society of Medicine in January of this year two papers with completely opposite conclusions were presented, in favour by A. R. Gilchrist, against by W. Evans.[1] Gilchrist, from observations on 434 consecutive patients, claims that the mortality rate for the control series was 42·2% as compared with 19·5% for those receiving anticoagulants. Thrombo-embolic complications were reduced from 26% to 10%. It is sometimes argued, says Gilchrist, that anticoagulants are unnecessary for the mildest attacks of myocardial infarction because 60% of hospital patients survive their six weeks' stay in hospital, and many make good and lasting recoveries without the use of these drugs; but he asks which of us will select on the first day of the illness the patient who will make an uninterrupted recovery. Anticoagulants must be used as soon as diagnosis is established. No one can safely employ these drugs without reliable laboratory control for prothrombin times. The one danger is hæmorrhage, and with proper control this is not often serious.

Evans approaches the subject mainly from consideration of the published results of himself and other workers. The object of the anticoagulant treatment is primarily to prevent thrombosis within the coronary circulation. In eight investigations on the incidence of thrombosis within the coronary circulation in subjects of cardiac infarction examined at necropsy, comprising 2351 in all, 57% had no coronary thrombosis. Since anticoagulant therapy cannot reduce the mortality rate by lessening the incidence of coronary thrombosis in more than half the subjects, does it in fact reduce it in the other half destined to develop thrombosis? When the mortality rate of subjects of cardiac infarction treated with anticoagulants and with more orthodox measures is examined, it is not clear why such comparison should have led so many to favour anticoagulant therapy. For example, a study of one report showed a mortality rate of 40% among patients with cardiac infarction as against 16% when anticoagulant therapy was used. But the mortality rate for the combined group was 28%, while in the same hospital among patients treated on orthodox lines in previous years the mortality rate was 26%.

Evans claims that the mortality rates of 1499 patients treated with anticoagulants as reported by ten observers compare unfavourably with his own 1000 cases in which treatment was on orthodox lines. The claim that deaths from thrombo-embolism can be reduced to negligible proportions (Gilchrist) by anticoagulants cannot, according to Evans, be substantiated from a consideration of published results. As the clinical diagnosis of thrombosis is notably difficult, embolism may also go unnoticed. Of 4451 reported patients not treated with anticoagulants 13% are claimed to have had thrombo-embolic episodes, and of the 1115 patients treated with anticoagulants, 9%; the difference is not significant. Evans also criticizes the laboratory control of anticoagulant therapy. A number of examples may be met in which the prothrombin time is not unduly low and yet the patient bleeds, and again in which the test told of hypocoagulability while thrombo-embolic incidents were recurring. Bleeding is the only unfavourable symptom arising directly from anticoagulant drugs, but is death from hæmorrhage to be preferred? A *questionnaire* sent to 228 leading cardiologists in the United States showed that 45% of them had encountered serious hæmorrhagic complications and a total of 122 deaths from bleeding mostly into the brain, gastro-intestinal tract or pericardium. Vitamin *K* can do little to counteract these serious episodes, for the damage has already been done before there is a signal for its use. Evans concludes: "It is a sound precept in medicine never to dispense a remedy to a patient when there is doubt that it can do good, and when it is known that it can do harm. That anticoagulant treatment in coronary occlusion will go the way of other discarded remedies is certain."

In the same number of the journal in a paper on cardiac emergencies D. Wheatley writes strongly in favour of anticoagulant therapy but gives no results to justify his advocacy. The last word has obviously not yet been written.

[1] *Proc. Roy. Soc. Med.*, May, 1954.

THE FATE OF BISMUTH CARBONATE.

LARGE quantities of bismuth carbonate are regularly offered to countless human stomachs to placate them in their dyspeptic wrath, but comparatively little thought is given to what happens to the bismuth carbonate. Fortunately its radio-opaque qualities make it an easy mark for the therapeutic sleuth, and this prompted F. Pygott[1] to investigate three of the six factors on which he considers that the therapeutic value of an alkali depends in the treatment of peptic ulceration. The three factors considered are the retention of bismuth carbonate in the stomach, its adherence to the gastric mucosa and its retention in peptic ulcers; the other factors are the chemical efficiency of the alkali, the absence of any after-secretion effects and the absence of undesirable side-effects. Pygott found that half the test dose of 20 grammes of bismuth carbonate was retained for an hour in the stomach by 10 of 20 patients with gastric ulcer and by three of nine patients with duodenal ulcer. Coating of the gastric mucosa was exceptional at the end of an hour and apparently is not therapeutically important. Although bismuth was retained for that period in the ulcer crater of nearly three of every four patients, the retention was considerable in only one of every four. Retention in the stomach is apparently maximal when the bismuth is given in milk or is followed by egg and milk, and evidence also favours giving it after a meal rather than before. Apart from this it seems that the effect will always vary from patient to patient.

[1] *Lancet*, June 26, 1954.

Abstracts from Medical Literature.

GYNÆCOLOGY AND OBSTETRICS.

Effects of Irradiation for Sterility upon Offspring.

IRA I. KAPLAN (*J. Obst. & Gynæc. Brit. Emp.*, December, 1953) states that the treatment of human female infertility with X-ray therapy would have been more universally accepted were it not for the pronouncements of possible dire genetic effects to follow such treatments, particularly those based on experimental work with the Drosophila fly. The author presents the records of patients irradiated by him for sterility twenty or more years ago. Of a large group of women treated, 252 responded successfully and bore 293 normal children. Eighteen of these children, born twenty or more years ago, have already married and produced 14 normal living children—that is, third generation grandchildren of the originally irradiated sterile women. Of this group, nine are boys and four are girls, and amongst these there is one set of twins. Two of these second generation women are at present pregnant. The grandchildren are normal in all respects. As a result of his study the author concludes that it may be properly said that irradiation when properly administered for female sterility is harmless to the mother, her children and subsequent grandchildren.

Breech Presentation.

H. H. WARE AND L. W. ROBERTS (*Am. J. Obst. & Gynec.*, April, 1954) report 473 primary breech deliveries in 11,475 patients, an incidence of 4·02% for breech presentations in patients twenty-eight weeks or more pregnant, with infants weighing four pounds or more. There was no maternal mortality; the uncorrected fœtal mortality was 5·7% and the corrected 2·11%. The authors emphasize the importance of conservative management with careful evaluation of the maternal pelvis and of the fœtal size and position by X-ray studies before the onset of labour. They state that labour should be rarely induced and not hurried; a second stage of one or two hours will make extraction of the breech easier if it becomes necessary. The average duration of labour was shorter than the average given in most text-books for vaginal deliveries. Wide episiotomy is recommended with most vaginal deliveries; it was performed in 325 of the 383 cases. No third degree lacerations occurred with any deliveries. The baby was completely extracted in 15% of cases, and assistance less than complete extraction was given in 52%. For vaginal deliveries Potter's method of breech extraction, the Wigand-Martin manœuvre or application of forceps for the after-coming head was used. The primary Cæsarean section rate was 16%; 10 of the 90 patients undergoing Cæsarean section had previously been delivered by Cæsarean section.

Intravenous "Pitocin" Infusions in Obstetrics.

ERNEST W. PAGE (*West. J. Surg.*, March, 1954) has reviewed the literature on intravenous infusion of "Pitocin" as an oxytocic agent prior to delivery and evaluates the usefulness and dangers of this therapy. His observations are based on ten years' personal experience of this treatment and on information supplied by 68 obstetricians on the west coast of America who had used the method. The author emphasizes the fact that "Pitocin" is a most potent drug and exaggerates the existing pattern of uterine motility. The proper dose can be measured not in units or volumes, but only in terms of individual uterine response. He considers that diluted "Pitocin" given intramuscularly is useful for short periods of stimulation of the uterus or for seeking the uterine threshold of sensitivity in order to assess a suitable dose by intravenous infusion. An advantage of the intravenous drip technique is that oxytocic activity ceases within two to three minutes after stopping the infusion. The two-bottle method (one bottle contains diluted "Pitocin") facilitates prompt regulation of the dose of "Pitocin". The most commonly used dilutions vary from 1:1000 to 1:5000 given at a rate of 15 drops per minute. The diluent used is a 5% solution of dextrose in water. The author recommends the continuation of the infusion through the second and third stages of labour and considers that the full-time attendance of the obstetrician is essential. This method was used by 61% of the obstetricians who answered the *questionnaire*, and the total number of patients treated in this way was at least 3500. There were no maternal deaths due to this treatment in the reported cases; five fœtal deaths were considered to be due to this treatment (three from accidental hæmorrhage and two from uterine tetany). No case of uterine rupture was encountered in the series. The author considers the following good indications for this type of therapy: prolonged labour due to atonic uterine inertia; induction of labour when combined with artificial rupture of the membranes; induction of labour one or more days after spontaneous rupture of the membranes; prevention of post-partum hæmorrhage in selected cases; the active treatment of post-partum hæmorrhage due to uterine atony. The following are debatable indications for this treatment: induction of labour without rupture of the membranes; secondary inertia during the second stage of labour; missed abortion. The author lists the following contraindications to the use of "Pitocin" infusion during labour: cephalo-pelvic disproportion; fœtal malpresentations causing dystocia; factors predisposing to uterine rupture (previous Cæsarean section, grand multiparity); factors predisposing to thromboplastin or amniotic fluid embolism (dead fœtus, accidental hæmorrhage); hypertonic patterns of labour; inability of the physician to be in attendance.

R. W. FULSHER (*West. J. Surg.*, April, 1954) reports on five consecutive cases in which labour was induced by means of intravenous "Pitocin" drip infusion. The viability of the fœtus extended from the thirty-fourth to the thirty-ninth week; four patients were *primigravidæ* in whom the fœtal head was unengaged. The intravenous drip infusion was commenced at the rate of 15 drops per minute of 1:1000 "Pitocin" solution in 5% glucose in water, and was usually sufficient to cause contractions to occur. The author states that more concentrated solutions (for example, 1:500 or 1:250) may have to be used when the procedure continues for several hours, to avoid excessive administration of fluid. The intake per minute of "Pitocin" may also have to be increased to obtain the desired effect. The amount of "Pitocin" used in these cases varied from one millilitre (minimum) to 3·5 millilitres (maximum), and the duration of stimulation was from five to eleven hours. The drip infusion was continued through the second stage and until after the delivery of the placenta.

Epithelial Abnormalities of the Cervix during Pregnancy.

BEN PECKHAM, R. R. GREENE, J. T. CHUNG, M. A. BAYLY AND H. B. W. BENARON (*Am. J. Obst. & Gynec.*, January, 1954) report a further study of five cases of epithelial abnormalities of the cervix during pregnancy in which four of the five lesions persisted after pregnancy. Fourteen similar cases had been reported previously. The authors recognize the accepted view that pregnancy may cause specific epithelial changes in the cervix which can be confused with pre-invasive carcinoma of the cervix. These so-called "pregnancy changes" have been reported in the literature as disappearing after pregnancy, but had not been diagnosed as pre-invasive carcinoma. Certain criteria are necessary for the diagnosis of pre-invasive carcinoma; but irrespective of nomenclature, the lesions described by the authors are not transient "pregnancy changes", since most of them persisted after the termination of pregnancy. Clinical details of the five cases are tabulated, and photomicrographs of cervical sections are reproduced. The authors consider these cases to be examples of pre-invasive carcinoma of the cervix, though all authorities may not agree on this diagnosis. Adequate biopsies, adequate samples of cone and hysterectomy specimens, immediate fixation and good tissue technicians are considered all-important in the study. Since 84% of these cervical lesions persisted after pregnancy the authors reaffirm their opinion that these lesions discovered during pregnancy are not specific and evanescent pregnancy changes.

Mitral Stenosis in Pregnancy.

G. LESLIE WATT, W. G. BIGELOW AND W. F. GREENWOOD (*Am. J. Obst. & Gynec.*, February, 1954) give a preliminary report on seven pregnant patients with mitral stenosis treated by commissurotomy. Two of the authors, who are about to publish results of some 65 operations of commissurotomy for mitral stenosis, were so impressed by the good results in non-pregnant patients that they thought that the operation should be extended to the pregnant patient. They state that it is generally admitted that pregnancy is a dangerous episode in the life of a patient with mitral stenosis. The accepted principle of treatment in pregnancy complicating mitral stenosis is to allow one pregnancy if there has been no heart failure, and then seriously to consider sterilization; if there has been a history of failure, the pregnancy is terminated and sterilization is advised. The following criteria were sought by the authors in selecting patients with mitral stenosis

complicated by pregnancy suitable for commissurotomy: clinical proof of mitral stenosis, a definite disability due to pulmonary congestion, absence of other important diseases of the heart and absence of chronic failure of the right side of the heart. The authors consider that probably all of the seven patients would have had the pregnancy terminated had not this operation been undertaken. All seven patients stood the operation well, and there were no deaths. The optimum time for operation as regards gestation is selected on the basis of the heart lesion and is usually in the early months of pregnancy. The operation does not produce great shock, there is no tendency for the patient to abort, and the patients were usually allowed up on the fourth post-operative day and home in two to three weeks. Six out of seven patients required aspiration of the chest a few days after operation, and one patient had a pulmonary embolus on the twelfth day. Three have subsequently had normal confinements; the remaining four patients were unconfined but had continued to improve. An immediate relief of symptoms was noted by all patients of the series. The authors admit that the series is small and the obstetrical data are incomplete, but the results are encouraging. They hope that increased experience with this operation will permit more young women with mitral stenosis to bear children safely, and that the indications for therapeutic abortion and sterilization will be narrowed to a small group.

The Abdominal Approach to Cysto-Urethrocele Repair.

WILLIAM H. MASTERS (*Am. J. Obst. & Gynec.*, January, 1954) describes in detail a surgical technique for repairing an existing or potential cystocele and urethrocele through the abdominal route when this approach is necessary to attend to coexisting pelvic pathological conditions. Twenty-five such operations have been observed for from one to three and a half years, and 23 have been successful. The operation described by the author is considered suitable for those patients whose bladder and urethral prolapse causes embarrassment and who are unsuitable for combined vaginal hysterectomy and repair. Patients with very large myomata, old pelvic infection, endometriosis and ovarian cysts in addition to cysto-urethrocele, enter this category. The importance is stressed of good intraabdominal exposure of the herniation sites beneath the bladder and urethra. Dissection of the avascular space between the bladder anteriorly and the vagina posteriorly is carried laterally on each side of the pelvic wall. When the level of the bladder trigone is reached, upward pressure on the bladder makes the ureters tense and permits their identification. Further dissection downward, aided by the presence of an indwelling catheter, will demonstrate the herniation site beneath the urethra. After the hysterectomy the vaginal vault is closed and the paracervical fascia is sutured in the mid-line as an extravaginal support. The fascial separation under the bladder is repaired with interrupted chromicized sutures, from the trigone area to the apex of the vaginal cuff. The trigone is then elevated, and the hernial site beneath the urethra is demonstrated. This site is repaired from the region of the trigone to the base of the urethral meatus. Fascial tears of the pubocervical fascial layer in a horizontal plane are sought and repaired when present. After completion of the abdominal operation the patient is placed in the lithotomy position and draped in the usual manner. The redundant vaginal mucosa of the anterior vaginal wall is not touched, as it soon retracts. The repair sutures can be palpated under the vaginal mucosa and should extend to within one centimetre of the urethral meatus. Additional suturing through the vaginal route should not be necessary unless obesity has precluded satisfactory repair of the urethrocele from above, or when a lateral tear from the mid-line cannot be successfully exposed from the abdominal approach.

Electric Shock and the Menstrual Cycle.

S. T. MICHAEL (*Arch. Neurol. & Psychiat.*, February, 1954) discusses the relationship between electric shock therapy and the menstrual cycle. He states that 687 records were reviewed, of which 331 had sufficient data for study. It was found that the therapy either shortened or lengthened the menstrual cycle, causing temporary amenorrhœa. The most frequent pattern was complete absence of menstruation throughout the duration of treatment. The effect of shock treatments was cumulative. Increased numbers of treatments increased the delay in resumption of menstruation. As an example, one patient who received 54 treatments in eight and a half months did not menstruate for 268 days. Amenorrhœa-producing properties of electric shock were enhanced by subcoma or coma treatment. The author interprets his findings as indicating that either diminution or increase of pituitary gonadotropic function may occur, the more prevalent effect being diminution.

SURGERY.

Early Treatment of Paraplegia from Spinal Fractures.

F. W. HOLDSWORTH AND ALAN HARDY (*J. Bone & Joint Surg.*, November, 1953) have treated 68 patients with paraplegia from fracture-dislocations of the spine at the thoraco-lumbar level. They point out that the tip of the spinal cord lies opposite the lower border of the first lumbar vertebra. Opposite the junction of the twelfth thoracic and first lumbar vertebræ lie the first and second sacral segments of the cord, while all the lumbar cord segments are situated at a higher level, probably extending as high as the ninth thoracic vertebra. Thus all the lumbar roots arise from the cord above the thoraco-lumbar junction, at which level they lie side by side with the upper sacral segments of the cord. Thus at the thoraco-lumbar junction there are two types of nerve tissue supplying the lower part of the trunk and legs—namely, the cord, which is very susceptible to injury and incapable of regeneration, and the lumbar nerve roots, which are more tolerant of injury and in certain circumstances may be capable of regeneration. The authors have found that, even if the cord injury is complete, as it usually is, the roots often escape or recover. Full root escape on either side is shown by the presence of reasonably good flexion and adduction movement of the hips with weak extension and abduction movement, good extension and weak flexion of the knees and weak dorsiflexion of the ankles, but no plantar flexion of the foot or movement of the toes. Cutaneous sensation to pin-prick and cotton wool is present in the lumbar dermatomes, and the knee jerks are present. The function of the lumbar roots is of the greatest importance. Without the function provided by lumbar roots, the balance and stability of the lower limbs and trunk are seriously impaired, and walking in caliper splints is far from easy. With such function there is much better muscle control, and mobility is greatly increased. If the lumbar nerve roots are undamaged, many patients do not require full-length calipers. Even the escape of one or two roots on either side can determine the possibility of the patient taking steps by using the hip flexors instead of merely swinging the legs by pelvic tilting. It is therefore essential that a careful neurological examination be made to correlate the neurological level with the fracture level and thus to differentiate between cord and root injury; for even with initial complete paraplegia, it is the authors' experience that, whereas the cord never recovers, the roots sometimes do. Fracture-dislocations can be divided into stable and unstable types. Because of the possibility of root recovery, care must be taken to prevent further damage to the roots by manipulation of the spine or during treatment. For this reason unstable fracture-dislocations are fixed internally by plates. Internal fixation also assists in the nursing of the patient. By careful nursing pressure sores are avoided and bladder and bowel function is re-established. For some time an indwelling catheter is used, and by irrigation and instillation of antiseptics the bladder is distended; this leads to automatic bladder function.

Complications of Development Cysts.

W. J. HAWKINS AND R. J. JACKSON (*Am. J. Surg.*, December, 1953) report the clinical and pathological findings in 40 cases of presacral or precoccygeal cysts. In 21 cases there were no ano-rectal complications associated with the developmental cyst, but in the remaining 19 a purulent sinus was present. In some of the latter cases a history was given of previous ineffectual surgical treatment, but when the mass was recognized and removed there was subsequent healing. The authors state that, even in the absence of a sinus, asymptomatic cysts discovered on routine examination of the rectum should be removed surgically, since the chance of their becoming infected is great, and in this event surgical treatment becomes much more difficult and the result less satisfactory. Of the patients in this series 30 were females and 10 males; 19 had dermoid cysts, 16 had epidermoid cysts, and five had mucus-secreting cysts.

Special Articles for the Clinician.

(CONTRIBUTED BY REQUEST.)

CVI.

THE MANAGEMENT OF NORMAL LABOUR.

DURING the latter weeks of pregnancy all patients should be apprised of the symptoms and signs which mark the initiation of the process of labour. Altogether too frequently we find an apprehensive young *primipara* entering hospital much too early, only to be reduced to a state of extreme fear and tension by the time labour actually commences. At the Royal Hospital for Women, Paddington, ante-natal exercises and general instruction classes are conducted by members of the physiotherapy department. The exercises are especially designed to aid and maintain maximum relaxation during labour. Although it is as yet rather early to judge the efficacy of this innovation, my personal feeling is that benefit of no mean magnitude results.

The first essential is that labour should be conducted with full aseptic and antiseptic precautions. The vulva and adjoining skin of the thigh should be sterilized with a suitable antiseptic, and in most cases "Dettol" cream ably fulfils this requirement. Fresh applications of the cream should be made prior to every pelvic examination. The hands of the obstetrician should be treated as for a major surgical procedure. Sterile gloves, sterile gown, a cap and a mask which extends over the nose should be worn. At all times when the vulva is exposed, during either labour or the puerperium, everybody in the immediate vicinity of the patient should be effectively robed. In this way the risk of conveying infection from the nose or throat of the attendant is minimized.

Recognition of the Onset of Labour.

The onset of labour can usually be recognized by the commencement of regularly recurring uterine contractions. The pain accompanying the contractions is variable, but is usually felt directly over the uterus or in the lower part of the back, and is synchronous with a palpable hardening of the uterus. After a time "the show" will be noticed. This consists of a variable amount of blood and mucus, and is a really valuable indication that labour has commenced. If a vaginal or rectal examination is carried out at this stage, the cervix will be flat and in most normal cases quite thin. Soon afterwards some degree of dilatation will be noted, and a tenseness of the membranes during a contraction will be obvious. It is my practice to instruct patients to remain at home until the regularly recurring contractions cause some discomfort. Should a "show" be noticed soon after the onset of the pains, or should rupture of the membranes occur prematurely, the patient is requested to report to the hospital without undue delay. Immediately the patient enters hospital it is essential to know to which of the four positions of the vertex the presentation in the case under investigation belongs. The height of the anterior shoulder above the pelvic brim and the degree of descent of the fœtal head into the pelvis should be noted. Difficulty will be experienced only if the uterus is unduly irritable, if the examiner's hands are cold, if the *liquor amnii* is in excess of normal, if the patient's bladder is full, or if she holds her abdominal muscles too tightly. The blood pressure, temperature, urine, pulse rate *et cetera* should be checked, and a careful watch kept for any digression from the normal during labour.

Management of the First Stage of Labour.

As soon as labour begins, the patient should have a warm shower. She should empty her bladder, and have the rectum emptied by enema. Subsequently she should be encouraged to remain ambulatory, but allowed to lean against some support during pains. As the pains increase in severity, she will of course migrate to the bed. It is highly desirable that the patient should have been instructed in relaxation. The patient who cooperates with her attendant and attempts to relax during phases of uterine activity seems to have a much smoother and more rapid labour than her tense hysterical sister.

As pains increase to the stage of definite discomfort, some relief should be given by the administration of one or two doses of a mixture the active ingredients of which are chloral hydrate, grains 20, and potassium bromide, grains 15. When the cervix is between three and four fingers dilated, as ascertained by either rectal or vaginal examination, a stronger analgesic will be necessary. An intramuscular injection of pethidine hydrochloride, 100 milligrammes, combined with hyoscine hydrobromide, grain 1/150, will prove remarkably effective in most cases. For the multiparous patient this plan should be quite sufficient to ensure a reasonable degree of comfort during the first stage. It will also suffice in the majority of cooperative primiparous patients. Occasionally, however, a further injection of pethidine hydrochloride, 100 milligrammes, will be necessary. This may be given with absolute safety to both the mother and her baby. If a second injection is deemed necessary, it is my rule to give it two or three hours after the initial combined injection. In cases in which there is a departure from the path of normality considerable ingenuity is required to derive means of securing sufficiently prolonged analgesia without doing damage to the fœtus.

In order to minimize the risk of introduction of sepsis the number of vaginal examinations should be limited. Usually either a rectal or a vaginal examination is desirable at the time of first examining the patient, in order to determine the character and degree of dilatation of the cervix, and a second examination when the membranes rupture often yields useful information. At this stage the size of the cervix is investigated, it is ascertained that the cord has not prolapsed, and the position of the head, previously identified on abdominal examination, is confirmed. In cases in which the membranes prove excessively unrelenting, artificial rupture when the cervix has attained full dilatation is very helpful in hastening the progress of labour.

Management of the Second Stage of Labour.

Generally after the membranes have ruptured there is a slight lull in the pains, but they soon return with greater intensity. They also alter greatly in character, becoming "bearing down" in type, and recognizable by observation of the patient, whom they cause to grunt. During this stage the patient should be lying on her back with her feet supported, and her hands pulling on a fixed towel during contractions. In this way leverage is obtained, and she can bring her abdominal muscles into play so as to assist the uterus in bringing about the descent of the baby.

The increased intensity of the pain demands that some degree of anæsthesia replace the analgesia of the first stage. This necessitates the use of some form of inhalational anæsthesia. The three most commonly used agents are ether, "Trilene" and a combination of gas and oxygen.

The fœtal heart should be auscultated between the pains, and its rate recorded at least every half hour. A considerable rise or fall in the fœtal heart rate is indicative of fœtal distress. The passage of meconium in relation to a presentation other than a breech is also suggestive of fœtal distress, but is usually not so important as a variation in the fœtal heart rate.

The work of the obstetrician really begins when the fœtal head reaches the vulva. His duty is to conduct the passage of the head and body of the fœtus through the pelvic outlet, and as far as possible to avoid serious injury to the structures which comprise the pelvic floor. In Australia women are usually delivered lying upon their left side with the thighs partly flexed, and the knees held apart either by an assistant or by some suitable mechanical support. Personally I favour the dorsal position for all deliveries whether they are normal or otherwise. My reasons are as follows: (i) The voluntary muscles can be more satisfactorily brought into play. (ii) It is more simple to preserve an aseptic technique. (iii) The fœtal heart can be more satisfactorily auscultated. (iv) Soiling of the bed is more readily prevented. (v) Anæsthesia can be both better managed and better controlled. (vi) The perineum can be just as effectively protected. (vii) The patient at the conclusion of the second stage is in the position universally adopted for conduct of the third stage.

As the perineum becomes distended by the head, the passage of a small amount of fæcal material from the anus is common. Time should be allowed for expulsion of the head, particularly in the *primipara* or in the case in which the perineum appears unusually resistant. If delivery is being conducted with the patient under partial anæsthesia, the pains will be weakened and to some extent delayed. During actual delivery of the head the anæsthetic may have to be "pushed" to the extent of producing surgical anæsthesia. The main object is to ensure that the occiput is delivered first, and then to prevent extension of the head from taking place until the biparietal diameter has escaped from the vulva. By exerting pressure against the stretched perineum with the palm of the hand, and at the same time allowing the occiput to escape from beneath the *symphysis pubis*, this part of the delivery can usually be accomplished quite satisfactorily. Should the perineum be subjected to excessive stretching during delivery of the head, or should laceration be inevitable, then it is essential to perform a

small episiotomy. A medio-lateral incision will be most satisfactory, provided that the lateral deviation does not pass more laterally than the margin of the anal canal. Nothing is worse from the point of view of immediate suturing, immediate healing and remote result than the wide lateral episiotomy which was once in vogue.

The head is now permitted to undergo gradual extension, the stretched vulval ring being eased successively over the face and chin. As soon as the head is born, it is essential to determine whether or not the umbilical cord surrounds the fœtal neck. Should it do so, it is either drawn down and then passed over the head, or quickly divided between clamps.

As a rule, once the head is delivered, the chief difficulty of birth is over. Generally a little fundal pressure will result in the expulsion of the shoulder girdle and the trunk. Should difficulty be encountered, the head is first drawn backwards to free the anterior shoulder, and then forward to free the posterior shoulder. A particularly useful manœuvre is to exert pressure immediately above the symphysis in order to force the wide biacromial diameter into the wider oblique or transverse diameter of the brim. Should all else fail, the index finger may be hooked into the posterior axilla and traction made in the axis of the pelvic outlet. Care must be taken in performing this manœuvre, as it is not infrequently associated with a severe degree of vulval laceration.

Immediately after delivery the baby's eyes are wiped with sterile cotton wool. It is now not customary to instill an antiseptic into the conjunctival sac. The mouth and pharynx are then cleared with a mucus extractor. Attention is finally directed to the cord; when pulsation ceases at the maternal end, it is divided between ligatures approximately two inches from the umbilicus.

Management of the Third Stage of Labour.

The duty of the obstetrician is now to ensure that undue relaxation of the uterus does not occur, and to be ever watchful for early signs of abnormal hæmorrhage. When separation of the placenta occurs, the body of the uterus becomes smaller, harder, more globular and more movable. At the same time the level of the fundus rises, and the suprapubic depression gives way to quite a definite bulge. A further "show" of blood and lengthening of the cord give added proof that expulsion of the placenta is imminent. Actual expulsion may be assisted by gently pushing the uterus downwards and backwards in the direction of the axis of the pelvic brim. The placenta is then carefully inspected to ensure that it is complete, and that there is no evidence of a succenturiate lobe. This is recognized by a deficiency in the membranes with blood vessels coursing to its margin from the main placental mass. Should this lobe be present, its removal is essential, for it is a potent source of both primary and secondary post-partum hæmorrhage. Finally, ergometrine, 0·5 milligramme, and "Pitocin", one cubic centimetre, are given intramuscularly to ensure adequate uterine contraction and retraction.

Over the past few years there has been increasing use of oxytocics prior to the completion of the third stage. I feel that the days of experimentation are now passed and that ergometrine or synthetic ergometrine substitute ("Methergin") can safely be given in order to hasten the third stage and to minimize blood loss. One rule, however, must be observed, and that is to give the drug intravenously immediately the anterior shoulder is delivered. I have myself used this method for years and have never had cause for regret.

The final duty of the obstetrician is to inspect the vulva carefully for lacerations, and to remain with the patient until all possibility of post-partum hæmorrhage has passed.

D. R. SHEUMACK,
Sydney.

Medical Societies.

MEDICAL SCIENCES CLUB OF SOUTH AUSTRALIA.

A MEETING of the Medical Sciences Club of South Australia was held in the Anatomy Theatre, New Medical School, Frome Road, Adelaide, on May 7, 1954.

Smoking and Cancer of the Lung.

DR. G. M. BADGER, in a paper on smoking and cancer of the lung, said that over the past fifty years most countries had reported a marked rise in mortality attributable to cancer of the lung. There had been a sharp increase in Australia, but the present incidence of the disease was only about one-third that in England. The first problem was to decide how much was associated with improved diagnostic methods *et cetera*. It was supposed that part at least of the increased mortality was real, and cigarette smoking had been suggested as a contributory factor. The evidence was largely dependent on the observations: (i) that the incidence of cancer of the lung was greatest in those countries having a high cigarette consumption, and vice versa; (ii) that heavy smokers showed a higher incidence of the disease, and that the percentage of non-smokers amongst patients with cancer of the lung was smaller than among the general population; (iii) that tobacco "tar" produced by smoking cigarettes in a machine designed to simulate normal smoking had been shown to produce carcinoma when applied to the skin of mice.

Atmospheric pollution had also been suggested as a contributory factor. In this connexion it was noteworthy that benzpyrene had been identified in soot, in atmospheric dust, in processed rubber, and in the exhaust gases of motor-cars.

Heterotrophic Carbon Dioxide Fixation.

DR. M. F. UTTER read a paper on heterotrophic carbon dioxide fixation.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

A STRANGE DISEASE AMONG MARINES AND CONVICTS.[1]

[From White's "Journal of a Voyage to New South Wales".]

June, 1787.

BEFORE we sailed from the Motherbank a sporadic disease had appeared amongst the marines and convicts. On its first appearance it resembled the mumps or swelling of the chaps; and as that distemper sometimes terminates in a translation of the inflammation to the testicles, so this complaint (after the swelling and the induration of the jaws had subsided, which usually happened on the sixth or seventh day) never in one instance failed to fix on those parts; and that in so very obstinate a manner, as not to give way to the treatment generally found effectual in similar inflammations. One of the convicts thus affected was seized with an intermitting fever; between the paroxysms I gave him an emetic; which had such a sudden and wonderful effect on this strange complaint that I was induced to repeat it; and I found it effectual in this, as well as in all subsequent cases. As soon as we got to sea the motion of the ship acted on those who were affected, to the number of seventeen, in a most surprising and extraordinary manner. Indeed it was so sudden that it was like a placebo. I could never account, with any satisfaction to myself, for the origin of this uncommon disease, though much acquainted with those incident to seamen, nor did I ever see or hear of any that resembled it. The most steady and prudent of marines, even those who had their wives on board, were equally affected with those who led more irregular lives. At first I attributed it to the verdigrease that might gather on the copper utensils wherein the provisions were cooked; but I am now fully persuaded that this was not the source from which it proceeded; for at the very time it was most prevalent and attended with the greatest degree of inveteracy, the coppers were cleaned and made as bright as could be every day under my own inspection. Another proof and a very strong one that it did not proceed from the before-mentioned cause is, that the provisions still continued to be dressed in the same coppers when the smallest trace of the disease was no longer to be perceived; which was the case after four or five days at sea.

[1] From the original in the Mitchell Library, Sydney.

Correspondence.

CHANGE OF DESIGNATION OF THE MENTAL HOSPITAL, ORANGE.

SIR: It is desired to advise that the Governor-in-Council, in pursuance of Section 25 of the *Lunacy Act* of 1898, has approved to change the name of "The Mental Hospital, Orange", to "Bloomfield Hospital", and also to appoint "Bloomfield Hospital" as a Reception House for the Insane. The requisite notifications will be published in the *Government Gazette* on July 23, 1954. It would be appreciated if this change could be referred to in THE MEDICAL JOURNAL OF AUSTRALIA, so that it will be brought to the notice of medical practitioners generally.

Yours, etc.,

G. R. G. CAMERON,
Under Secretary, Department of Public Health.

Sydney,
July 19, 1954.

APPENDICECTOMY AND THE McBURNEY INCISION.

SIR: Since I graduated I have been impressed often by the difficulties to which many appendicectomies, performed through the McBurney incision, give rise, even in the hands of experienced and competent operators. How commonly one sees a surgeon peering into a small opening in the right iliac fossa, the edges of which are being traumatized by a zealous assistant hauling on a pair of retractors; or, a similar picture three-quarters of an hour later, the wound now much larger, with various muscles cut across their line of section, the continuity of one or two nerves severed, the assistant still pulling, and an exasperated surgeon finally extracting an appendix, whose tip disappeared up towards the kidney, or down into the pelvis; or again, a surgeon removing a normal appendix through this small hole, out of which is oozing purulent fluid, and through which he ineffectively attempts to explore the abdomen with his index finger, which he wishes fervently to be three or four inches longer; and finally, giving up the unequal struggle, he admits defeat and makes a second incision.

The cause of all this bother is the famous and trusted McBurney muscle-splitting or "grid-iron" incision. It is quick and easy, it opens directly over the caecum, and the newly qualified doctor finds it comparatively easy to learn. But suppose the appendix is "hard", or the appendix is not at fault at all, or the patient is fat, then the difficulties commence, especially with the inexperienced, whose peritoneal opening is much smaller than his inadequate skin incision, and who is not too sure how to go about enlarging his opening. Then, I feel, this accustomed approach becomes a menace, and further, I venture to say, with one exception has no part to play in the surgery of the vermiform appendix. That exception is the appendiceal abscess of long duration which is not resolving, and which requires adequate dependent drainage over the site of maximal tenderness; even then this incision should be a muscle-cutting, and not a muscle-splitting, incision, in order to fulfil one of the principles for the opening of an abscess.

Doubtless, it is a sweeping statement that this time-honoured incision should be relegated to the shelves of history, for in 90% of interim appendicectomies, and in a good proportion of acute cases, there is no easier or neater operation. But who can tell, pre-operatively, which acutely inflamed appendix will "pop out" of the wound; and who, in the interim case, for the removal of the so-called chronic appendix, through this incision can explore adequately an abdomen, which should be the first essential of such a procedure?

What then is the correct incision? It is one that transgresses no anatomical principles, gives adequate exposure of the appendiceal region, and allows of easy enlargement. To my mind such criteria are fulfilled best by the right paramedian incision. It should be of sufficient extent to allow the hand to enter the abdomen. The actual opening and closing of the abdomen may take longer than the McBurney approach, but such delay is repaid abundantly.

In most cases the appendix is immediately discernible and easily removed. Should it be otherwise, there need be no great delay, difficulty or exasperation, for the problem can be very readily tackled by changing to the left-hand side of the table. With the assistant exerting gentle elevatory traction on the right side of the wound, a pack is inserted to keep the small bowel out of sight and expose the caecum and appendix. Then the difficult appendicectomy of the McBurney incision becomes a simple technical manœuvre, done under vision with minimal trauma or risk to surrounding important structures. The chances of spreading infection are no greater with the big incision, obviated as they have been to a great extent in the last twelve years by the advent of chemotherapy. The occasional wrong diagnosis offers no terrors, as exploration of the abdomen is easy and extension of the incision a simple matter. Although, as I have already said, appendicectomy through a McBurney incision is often an easy operation, there is no doubt in my mind that for avoidance of technical difficulties and the surmounting of diagnostic errors, the paramedian incision cannot be bettered, and should be used as a routine.

Yours, etc.,

C. J. WINDSOR.

371 Queen Street,
Brisbane,
July 20, 1954.

Obituary.

ROBERT BLAKEWAY WADE.

WE are indebted to Sir Charles Blackburn for the following appreciation of the late Sir Robert Blakeway Wade.

The news of the death of Sir Robert Wade will have been received with profound regret by the profession throughout the Commonwealth, for though he had been some years in retirement there can be few unaware of the distinguished part he had played in the development of Australian medicine. In New South Wales, where his great reputation was made, and where there are so many who gratefully recall how much they owe to his surgical skill, regret closely linked with a deep sense of personal loss will have extended far beyond the limits of the medical profession.

Robert Blakeway Wade belonged to a family which has a tradition of rendering great service to the State. His father, W. Burton Wade, was a member of the Legislative Council, and one of his brothers, the late Sir Charles Gregory Wade, was one of the most notable premiers of New South Wales.

He was born in Bathurst early in 1874, and the family having moved soon after to Sydney, he attended the Sydney Grammar School, passing from there to the University of Sydney, where he enrolled in the Faculty of Medicine. He qualified in 1896, and after spending a year as resident medical officer at the Prince Alfred Hospital he was appointed in 1897 assistant surgeon on the staff of the Hospital for Children at Glebe Point. The appointment marked the beginning of an association that was to be Wade's absorbing interest for the rest of his professional life.

At the hospital he naturally came into close contact with the President and Senior Surgeon, Sir Charles Clubbe, who was busy with plans to replace the very primitive institution in which they were working with something better. Quickly recognizing Wade's unusual administrative ability, Clubbe enlisted his cooperation in his scheme, and in the succeeding years the two worked most enthusiastically together to establish a children's hospital worthy of a great city, and in 1906 they had the satisfaction of seeing their plans come to fruition with the opening of the Royal Alexandra Hospital for Sick Children in Camperdown, under the chairmanship of Sir Charles Clubbe.

On the death of Sir Charles Clubbe in 1932 Wade was elected President of the hospital in his place, a position he filled with great distinction till his retirement in 1944.

The facilities available in the surgical wards of the hospital enabled Wade to develop rapidly his innate surgical skill, and in this he was helped by the fact that he was an avid reader and took great pains to keep in touch with what was being done in the orthopædic field all over the world. By the time he was promoted to the full staff he was an accomplished surgeon, and the work he was doing soon began to attract wide attention, especially some of the techniques he devised for the rehabilitation of children crippled with poliomyelitis. When the Royal Australasian College of Surgeons was established he was naturally chosen as one of the foundation members, and from 1935 to 1937 he was President of the College. In 1937 he was made an Honorary Fellow of the Royal College of Surgeons of

England, and in 1938 the great services he had rendered to the community, particularly in the field of child welfare, were recognized by his being created a Knight Bachelor, an honour that gave great satisfaction to the whole medical profession.

He was an excellent teacher and held the post of Lecturer in Surgical Diseases of Children of the University of Sydney from 1926 to 1932, but he was at his best as a clinical teacher in the wards where he was greatly helped by his remarkable skill in winning the confidence and cooperation of his little patients.

He was a member of the British Medical Association for fifty-five years, having joined in 1899. He was a member of the Council of the New South Wales Branch from 1917 to 1933 and President in 1925-1926. He was a director of Prince Henry Hospital and consulting surgeon of the Royal South Sydney Hospital. He served during the first World War as Director of Orthopædics of the Army and was Director of Orthopædics of the Randwick Military Hospital. He was President of the New South Wales Medical Board for some years from 1933.

It was but to be expected that a man with such foresight and administrative ability should be sought after to supervise aspects of child welfare outside their hospital needs, and he gave unstintingly of his time to fill such positions as chairman of the New South Wales Infantile Paralysis Committee and many *ad hoc* committees set up to meet various contingencies. He was also for some years chairman of the New South Wales Institute of Almoners, and his balanced judgement enabled him to fill the difficult position of President of the New South Wales Medical Board with great distinction.

As a man Wade was what he looked—a most friendly person, natural and unassuming, and apparently quite unaware of the great admiration and esteem in which he was held. He was one for whom friendship rapidly ripened into affection, and it can be truly said that he was loved by every member of the staff of the Children's Hospital.

The name of Robert Wade will have a permanent place in the history of Australasian medicine, and there are very many who will cherish his memory as that of one whom it is good to have known. To none will it remain more precious than to the few remaining of that group of men of about his age who, in days when motor-cars were unreliable and roads intolerable, took their holidays with him camping and fishing for trout in the Monaro. They will recall a delightful, witty, dependable companion, boyishly happy when he landed a big one, always cheerful and quite unperturbed by the hazards of weather or transport, even when being extracted considerably bruised from his car overturned on the Goulburn road.

The loss of his wife after forty years of close companionship was a great blow and altered the whole course of his life, and unfortunately his loneliness was intensified at this time by increasing deafness, and this decided him a year later to retire from all his activities.

His last public appearance was the occasion in 1945 when he delivered the third Sir Charles Clubbe Memorial Lecture in the Great Hall of the University of Sydney, where he was warmly welcomed by a crowded audience. It was a most notable oration in which he displayed all his old vigour and enthusiasm in setting out a carefully organized plan on which he believed the future development of child welfare provisions in the State should be based. Happily he lived long enough to see the foundations of his scheme soundly laid.

As his health deteriorated, Sir Robert made his way back to Bathurst, the city of his birth, where he could be under the watchful care of Mrs. Cameron, the only survivor of his three daughters, and his son-in-law, Dr. Lloyd Cameron, and to them we offer our great sympathy in their loss.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

Courses for Part I of the D.A., D.G.O., D.L.O. and D.O.

THE Post-Graduate Committee in Medicine in the University of Sydney announces that courses suitable for candidates for Part I of the diplomas in anæsthesia, gynæcology and obstetrics, laryngology and oto-rhinology, and ophthalmology will be held from September 6 to November 19, 1954. Lectures will be held from 2 p.m. to 5 p.m. daily, and the fee for attendance at each of the courses will be approximately £31 10s. Further inquiries may be made from the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. *Telephones:* BU 5238, BW 7483.

Lecture at Balmoral Naval Hospital.

Dr. Keith Harrison will give a lecture on "Disorders of the Adrenal Gland" at the Balmoral Naval Hospital on Tuesday, September 14, 1954, at 2 p.m. Clinical cases will be shown after the lecture. All members of the medical profession are invited.

Course in Thoracic Diseases.

The Post-Graduate Committee in Medicine in the University of Sydney announces that a course in thoracic diseases will be held from September 27 to October 1, 1954, to coincide with the visit to Sydney of Dr. J. G. Scadding, of London, who will be guest speaker. Dr. Scadding is dean and director of studies at the Institute of Diseases of the Chest, Brompton Hospital, and physician and senior lecturer in medicine at the Postgraduate Medical School of London. The programme is as follows:

September 27: Students' Recreation Room, Royal North Shore Hospital—8.15 p.m., "Adventures and Misadventures in Intrathoracic Hydatid Disease", Dr. Cotter Harvey.

September 28: Thoracic Unit, Royal North Shore Hospital—2 p.m., registration; 2.15 p.m., introductory remarks, Dr. Cotter Harvey; 2.30 p.m., "The Clinical Examination of Patients with Respiratory Symptoms", Dr. J. G. Scadding; 3.45 p.m., "Primary Tuberculosis with Special Reference to Treatment", Dr. J. G. Scadding; 3.45 p.m., "Primary Tuberculosis with Special Reference to Treatment", Dr. Bruce White; 4.15 p.m., ward round, members of staff; 8.15 p.m. (at Stawell Hall, 145 Macquarie Street, Sydney), "Sarcoidosis", Dr. J. G. Scadding. (This lecture is being given in conjunction with the Australian Laennec Society.)

September 29: Scot Skirving Lecture Theatre, Royal Prince Alfred Hospital—2.15 p.m., "Pulmonary Suppuration", Dr. J. G. Scadding; 3 p.m., case demonstration, members of staff of Thoracic Unit; 4.15 p.m., symposium on "The Management of Pulmonary Tuberculosis", (*a*) "Planning Treatment" (Dr. J. G. Scadding), (*b*) "Medical Treatment" (Dr. Cotter Harvey), (*c*) "Surgical Treatment" (Dr. John S. MacMahon).

September 30: Thoracic Unit, Royal North Shore Hospital—2 p.m., "The Coughing Child", Dr. J. G. Scadding; 2.45 p.m., "Lung Cysts", Dr. C. G. Bayliss and Dr. Ian Monk; 3.45 p.m., clinico-pathological demonstration, Dr. R. M. de Lambert and members of the staff; 4.30 p.m., "Laboratory Aids in Thoracic Disease", Dr. C. S. Graham and Dr. Beatrix Durie.

October 1: Thoracic Unit, Royal North Shore Hospital—2 p.m., "Emphysema", Dr. J. G. Scadding; 2.45 p.m., radiological demonstration, Dr. Bruce Geddes; 3.45 p.m., "The Management of Bronchiectasis", Dr. A. G. McManis; 4.15 p.m., "Bronchial Carcinoma", discussion to be opened by Dr. Cotter Harvey and Dr. Ian Monk, with summary by Dr. J. G. Scadding; 8.15 p.m. (at Stawell Hall, 145 Macquarie Street, Sydney), "The Use and Abuse of Antibiotics in Respiratory Disease", Dr. J. G. Scadding.

Fees for attendance are £2 2s. for members of the annual subscription course and £3 3s. for non-members. Written application, enclosing remittance, should be made to the Course Secretary, The Post-Graduate Committee in Medicine, 131 Macquarie Street, Sydney. Telephones: BW 7483, BU 5238. Closing date for applications is September 20.

Week-End Course at Albury.

The Post-Graduate Committee in Medicine in the University of Sydney, in conjunction with the Border Medical Association, will hold a week-end course at the Albury Base Hospital, Albury, on Saturday and Sunday, September 4 and 5, 1954. The programme is as follows:

Saturday, September 4: 2 p.m., registration; 2.30 p.m., "Surgical Aspects of Diseases of the Stomach", Dr. John Loewenthal; 4 p.m., "Medical Aspects of Diseases of the Stomach", Dr. A. W. Morrow.

Sunday, September 5: 9.30 a.m., "Some Aspects of Abdominal Pain in Children", Dr. Charles Lee; 11 a.m., "Vascular Diseases", Dr. John Loewenthal; 2.30 p.m., "Hepatitis and Cirrhosis of Liver", Dr. A. W. Morrow; 4 p.m., "The Sickly Child and Chronic Ill-Health in Children", Dr. Charles Lee.

The fee for the course will be £3 3s. Those wishing to attend are requested to notify Dr. H. M. Webber, Honorary Secretary, Border Medical Association, 543 Kiewa Street, Albury, as soon as possible. Telephone: Albury 888.

THE MELBOURNE PERMANENT POST-GRADUATE COMMITTEE.

Course in Surgery, 1955.

IN March and April, 1955, the honorary surgical staff of the Royal Melbourne Hospital will conduct a course in surgery suitable for candidates for senior surgical qualifications. This will be an eight to ten weeks' course involving five half-days a week. It will consist of clinical demonstrations, tutorials in surgical pathology and instruction in operative surgery. The fee for the course will be £31 10s. Inquiries should be addressed to the Melbourne Permanent Post-Graduate Committee, 394 Albert Street, East Melbourne (telephone: FB 2547).

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 43, of July 15, 1954.

PERMANENT NAVAL FORCES OF THE COMMONWEALTH (SEA-GOING FORCES).

Appointment.—Alan William Searle is appointed Surgeon Lieutenant (for Short Service) (on probation), dated 2nd June, 1954.

Emergency List.

Termination of Appointment.—The appointment of Thomas Bowen Ready as Surgeon Lieutenant-Commander is terminated, dated 31st May, 1954.

AUSTRALIAN MILITARY FORCES.

Citizen Military Forces.

Eastern Command: Second Military District.

Royal Australian Army Medical Corps (Medical).—2/127800 Lieutenant-Colonel J. F. Sullivan, M.C., relinquishes command of 8th Field Ambulance, 14th May, 1954, is appointed Assistant Director of Medical Services, Headquarters, 2nd Division, and to be Temporary Colonel, 15th May, 1954. 2/70937 Captain (Temporary Major) A. L. Hellestrand is appointed to command 8th Field Ambulance, and to be Temporary Lieutenant-Colonel, 15th May, 1954. The provisional rank of 2/127807 Captain J. B. Westphalen is confirmed.

Southern Command: Third Military District.

Royal Australian Army Medical Corps (Medical).—3/51010 Lieutenant-Colonel R. B. Maynard, E.D., relinquishes command of 6th Field Ambulance, and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (3rd Military District), 1st July, 1954. The provisional appointments of the following officers are terminated, 14th November, 1953: Captains 3/101809 J. K. Clarebrough, 3/101016 R. D. Wilson, 5/26400 M. N. Orton and 6/15245 B. A. Smithurst. To be Captains (provisionally), 15th November, 1953: 3/101809 John Kevin Clarebrough, 5/26400 Mervyn Noel Orton, 3/101016 Robert David Wilson and 6/15245 Barry Anthony Smithurst. The following officers are seconded for post-graduate studies in the United Kingdom, 15th November, 1953: Captains (provisionally) 3/101809 J. K. Clarebrough and 5/26400 M. N. Orton. The following officers are appointed from the Reserve of Officers, and to be Captains (provisionally): Honorary Captains 3/101830 A. J. Rollo, 3rd May, 1954, and 3/87525 J. G. Bundey, 5th May, 1954.

Western Command: Fifth Military District.

Royal Australian Army Medical Corps (Medical).—5/32072 Captain (provisionally) E. J. England relinquishes the provisional rank of Captain and is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (5th Military District) in the honorary rank of Captain, 10th May, 1954. To be Temporary Major, 8th June, 1954: 5/15975 Captain D. C. Foster.

Tasmania Command: Sixth Military District.

Royal Australian Army Medical Corps (Medical).—6/5126 Major A. O. Green is appointed from the Reserve of Officers, 14th May, 1954.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps.

1st Military District.—To be Honorary Captain, 1st June, 1954: Robert William Ellwood.

3rd Military District.—To be Honorary Captain, 1st February, 1954: Robert John Reaburn (in lieu of the notification respecting this officer which appeared in Executive Minute No. 70 of 1954, promulgated in *Commonwealth Gazette* No. 34 of 1954).

ROYAL AUSTRALIAN AIR FORCE.

Permanent Air Force: Medical Branch.

The probationary appointment of the following Flight Lieutenants is confirmed: L. N. Walsh (039386), J. G. Campbell (039449).

Public Health.

INEBRIATES ACT, 1912.

THE following proclamation was published in the *New South Wales Government Gazette*, Number 108, of July 16, 1954.

I, Sir John Northcott, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Companion of the Most Honourable Order of the Bath, Lieutenant-General on the Retired List of the Australian Military Forces, Governor of the State of New South Wales and its Dependencies in the Commonwealth of Australia, in pursuance of the provisions of the *Inebriates Act*, 1912, and with the advice of the Executive Council, do, by this my Proclamation, establish the Mental Hospitals named and

described in the Schedule hereto, as State Institutions for the reception, control and treatment of inebriates.

Signed and sealed at Sydney this twenty-third day of June, 1954.

By His Excellency's Command,
M. O'SULLIVAN.

Schedule.

Callan Park Mental Hospital.
Gladesville Mental Hospital.
Kenmore Mental Hospital.
Morisset Mental Hospital.
Newcastle Mental Hospital.
Orange Mental Hospital.
Parramatta Mental Hospital.
Reception House, Darlinghurst.

Medical Practice.

POLICE OFFENCES (AMENDMENT) ACT, 1908, AS AMENDED.

THE following proclamation has been published in the *New South Wales Government Gazette* of July 30, 1954.

I, Sir John Northcott, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Knight Commander of the Royal Victorian Order, Companion of the Most Honourable Order of the Bath, Lieutenant-General on the Retired List of the Australian Military Forces, Governor of the State of New South Wales and its Dependencies in the Commonwealth of Australia, with the advice of the Executive Council, do, by this my Proclamation, declare that Part VI of the Police Offences (Amendment) Act, 1908, as amended, shall apply to:

Morphine-N-oxide, known as Genomorphine, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Morphine-N-oxide;

Dihydromorphine, known as Paramorfan, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydromorphine;

Dihydromorphinone, known as Hydromorphone, Dilaudide, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydromorphinone;

Dihydrodesoxymorphine, known as Desomorphine, Permonid, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydrodesoxymorphine;

Dihydrocodeine, known as Hydrocodin, Paracodine, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydrocodeine;

Dihydrocodeinone, known as Hydrocodone, Dicodid, Hycodan, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydrocodeinone;

Acetyldihydrocodeine, known as Acetylcodone, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Acetyldihydrocodeine;

Acetyldihydrocodeinone, known as Acedicone, Novocodon, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Acetyldihydrocodeinone;

Dihydrohydroxycodeinone, known as Oxycodone, Eucodal, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Dihydrohydroxycodeinone;

Benzylmorphine, known as Peronine, or other trade name, its salts, and any preparation, admixture, extract or other substance, containing not less than one-fifth per centum of Benzylmorphine;

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JULY 17, 1954.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	3(1)	1	3(2)	..	1	..	..	..	8
Amœbiasis	..	1	..	..	..	..	..	..	1
Ancylostomiasis	..	..	..	..	..	..	2	..	2
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	1(1)	10(8)	4(2)	..	1	..	..	..	16
Diphtheria	6(3)	10(2)	4(2)	..	5(4)	..	..	..	25
Dysentery (Bacillary)	..	1(1)	..	..	..	..	1	..	2
Encephalitis	1	..	..	1(1)	..	..	..	..	2
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	1	..	..	..	..	..	..	1
Infective Hepatitis	58(27)	8(6)	..	..	2(2)	..	..	..	68
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	4(1)	..	..	..	..	..	4
Malaria	..	1	..	..	1(1)	..	..	..	1
Meningococcal Infection	5(1)	6(3)	2(1)	1(1)	..	..	1	..	15
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	8(1)	9(7)	1	1	4(2)	..	..	..	23
Puerperal Fever	..	1	..	..	..	..	..	..	1
Rubella	..	5(3)	..	..	8(7)	..	..	1	14
Salmonella Infection	..	..	..	..	1(1)	..	..	..	1
Scarlet Fever	13(9)	25(14)	12(7)	3(2)	6(6)	..	..	..	59
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	..	..	..
Trachoma	..	..	..	..	366	..	..	..	366
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	95(86)	19(10)	4(1)	7(6)	6(1)	1	..	..	132
Typhoid Fever	1	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne)	..	..	1	..	..	..	..	..	1
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Methylmorphine, known as Codeine or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one per centum of Methylmorphine;

Ethylmorphine, known as Dionine, or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one per centum of Ethylmorphine;

B-4-Morpholinylethylmorphine, known as Pholcodine. Homocodeine or other trade name, its salts, and any preparation, admixture, extract or other substance containing not less than one per centum of B-4-Morpholinylethylmorphine;

Thebaine, its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Thebaine; and

Meprodine (β-1-methyl-3-ethyl-4-phenyl-4-propionoxypiperidine), its salts, and any preparation, admixture, extract or other substance containing not less than one-fifth per centum of Meprodine

in the same manner as it applies to the drugs mentioned in paragraph (a) of Subsection (2) of Section 18 of the said Act.

Signed and sealed at Sydney this seventh day of July, one thousand nine hundred and fifty-four.

By His Excellency's Command,

C. A. KELLY.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1953, as duly qualified medical practitioners: Davies, John Charles Allan, M.R.C.S. (England), L.R.C.P. (London); Enright, Michael Matthew Joseph, M.B., B.Ch., 1925 (National Univ., Ireland); Farquharson, Margaret, M.B., Ch.B., 1948 (Univ. Aberdeen); O'Higgins, James Patrick Dermott, L.A.H. (Dublin), 1949; Phillips, Bertram James, M.B., B.S., 1943 (Univ. Queensland), D.P.H. (Univ. London), 1951.

The following have been registered in accordance with the provisions of Section 17 (1) (c) of the *Medical Practitioners Act*, 1938-1953, as duly qualified medical practitioners: Ambroza, Sophie; Caska, Zdenko Josef; Derkatsch, Helene; Madirazza, Spasoje; Nicielburg, Tadeusz; Perendi, Serafima; Rosenzweig, Siefried.

The following additional qualifications have been registered: Coriette, Phillip Manning Christian (M.B., B.S., 1944, Univ. Sydney), M.C.R.A., 1953, D.R.M.T., R.C.P.S. (England), 1951; Gardner, Robert Augustin (M.B., 1916, Ch.M., 1928, Univ. Sydney, D.M.R.E., Univ. Cambridge, 1922, F.F.R., London, 1937), F.C.R.A., 1950; Lark, Elizabeth Anne (M.B., B.S., 1954, Univ. Sydney), B.Sc. (Med.), 1952, Univ. Sydney; Lines, Verlie (M.B., B.S., 1950, Univ. Sydney), D.A., 1954 (Univ. Melbourne); McDonnell, Lawrence Edward (M.B., B.S., 1944, Univ. Sydney, D.A., R.C.P. and S., England, 1949), F.F.A.R.C.S. (England), 1954; Robertson, Ossian (M.B., 1917, Univ. Sydney), M.R.C.O.G., 1935; Small, Thomas Henry (M.B., Ch.M., 1922, Univ. Sydney), F.R.C.O.G., 1951; Spencer, Terence Edward Thornton (M.B., B.S., 1951, Univ. Sydney), D.T.M. and H., 1953 (Univ. Sydney).

QUEENSLAND.

THE following additional qualifications have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, of Queensland: McLelland, Isabella, M.F.A., R.A.C.S., 1953; Sullivan, John Joseph, M.R.A.C.P., 1954; Murphy, Alexander Paterson, F.R.C.P. (London), 1954; Lane, Daniel Gerard, F.R.A.C.S., 1954.

Medical Appointments.

Dr. C. G. Roberts has been appointed Director of the Industrial Hygiene Division, Department of Public Health of New South Wales, on probation for a period of six months.

Dr. Jane Dugmore Nolan has been appointed a medical officer to the School Medical Service in the Department of Public Health of New South Wales.

Dr. J. P. Major has been appointed a public vaccinator to the City of Prahran, Victoria.

Dr. Heather June Sylvia Ross has been appointed medical superintendent (maternity section) of the Queen Elizabeth Hospital, Adelaide.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Stump, Kenelm John Witherington, M.B., B.S., 1953 (Univ. Sydney), 53 Coronga Crescent, Killara, New South Wales.

Diary for the Month.

AUG. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUG. 13.—Queensland Branch, B.M.A.: Council Meeting.
AUG. 16.—Victorian Branch, B.M.A.: Finance Subcommittee.
AUG. 17.—New South Wales Branch, B.M.A.: Medical Politics Committee.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Tasmania: Part-time specialist appointments for the north-west coast of Tasmania.

Editorial Notices.

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